



Application For Certification

Model Year:	2019
Engine Family:	KBMXC01.34K5
Evaporative Family:	KBMXU0021K51, KBMXU0021K5X
Permeation Family:	KBMXPMETAL51, KBMXPP102BK5
Models Covered:	R1250GS (0J91/0J93), R1250GS Adventure (0J51/0J53), R1250RT (0J61/0J63), R1250RS (0J81/0J83), R1250R (0J71/0J73)
Vehicle Class:	Highway Motorcycle (EPA), On-road Motorcycle (CARB)

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BMW AG
80788 München

Mrs. Mary D. Nichols, Chair
Mobile Source Operations Division
California Air Resources Board
Haagen-Smit Laboratory
9528 Telstar Avenue
El Monte, CA 91731

Division

Your/Our Reference

Your message dated

Department/From

Telephone

Fax

E-mail

Date

Subject

EG-822 / Magnus Pfrogner
+49-(89)-382-35019

Magnus.Pfrogner@bmw.de
23 April 2018

Application for 2019 Model Year Certification of BMW Motorcycles

Dear Sir or Madam,

We herewith submit applications for 2019 model year motorcycle engine families as follows:

KBMXC0.31G3X: G310 R, G310 GS

KBMXC0.65C65: C650 Sport, C650 GT

KBMXC01.04K4: S1000R, S1000RR, S1000 XR

KBMXC01.34K5: R1250 GS, R1250 GS Adventure, R1250 RT, R1250 RS, R1250 R

KBMXC01.2K21: R nine T, R nine T Scrambler, R nine T Pure, R nine T Racer,
R nine T Urban G/S

KBMXC0.804K7: F800 GT, F800 R

KBMXC01.64K4: K1600 GT, K1600 GTL, K1600 B

All of the data and records not included in the application such as technical descriptions and test data are on file and can be made available to the agencies within 30 days upon request.

We trust that the documentation will meet with your approval and that ARB's Certificate of Conformity for the preceding engine families can subsequently be issued.

Company
Bayerische
Motoren Werke
Aktiengesellschaft

Postal address
BMW AG
80788 München

Office address
Petuelring 130

Office address
Forschungs- und
Innovationszentrum (FIZ)
Kronstraße 147

Telephone
Switchboard
+49 89 382-0

Fax
+49 89 382-70-25858

Internet
www.bmwgroup.com

Bank details
Deutsche Bank
IBAN DE05 7007 0010
0152 6946 00
BIC DEUTDE33XXX

**Chairman of the
Supervisory Board**
Norbert Reithofer

Board of Management
Herald Krüger,
Chairman
Milagros Cañía Carreiro-
Andree
Markus Duesmann
Klaus Fröhlich
Pieter Nota
Nicolas Peter
Peter Schwarzenbauer
Oliver Zipse

**Registered in
Germany**
München HRB 42243



Subject **Application for 2019 Model Year Certification of BMW Motorcycles**
Date 23 April 2018
Page 2


The certificate should be mailed to the following address:

Roberto Rossetti
VP Engineering US
200 Chestnut Ridge Road
BMW of North America LLC
Woodcliff Lake, NJ 07677

Very truly yours,

Bayerische Motoren Werke Aktiengesellschaft

i.V.



Dr. Dirk Ehmanns

i.A.



Magnus Pfrogner

Enclosure

BMW AG
80788 München

Director
Certification Division
Office of Mobile Sources
U.S. Environmental Protection Agency
2565 Plymouth Rd.
Ann Arbor, MI 48105

Division

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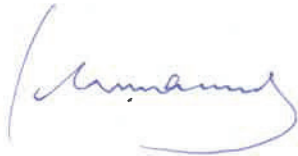
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200 Chestnut Ridge Road
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Woodcliff Lake, NJ-07677

Very truly yours,

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Your reference

Your message dated

Department/From

Telephone

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Date

Subject

EG-822/ Tina Göckert

+49-(89)-382-32192

+49-(89)-382-7032192

Tina.Goeckert@bmw.de

04/29/2016

Request for Indoor Service Accumulation

Dear Sir,

BMW hereby requests permission to use an indoor chassis dynamometer, with either a human driver or robotic driver, when performing service accumulation required by 40 CFR 86.428. This procedure would be used in lieu of the outdoor track service accumulation described in Appendix IV to 40 CFR Part 86. Based on BMW's good engineering judgement, this method of service accumulation will provide equivalent results to the method prescribed in the regulations.

The reasons for using the indoor chassis dynamometer are:

- it results in safer conditions for the driver/ robot
- the driver/ robot has a driver aid and can follow the speed/distance criteria more closely than if driving on an outdoor track

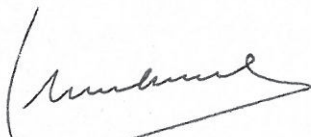
We will meet the required ambient conditions and all other regulations which are prescribed for the service accumulation.

BMW requests EPA concurrence for this alternate service accumulation procedure.

Very truly yours,

Bayerische Motoren Werke Aktiengesellschaft

i.V.



Dr. Dirk Ehmanns

i.A.



Tina Göckert

Company

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München HRB 42243

US EPA Fee Form

General Information

Date:	<input type="text" value="02/15/2018"/>
Process Code:	<input type="text" value="Submit New Filing Fee Form"/>
Manufacturer Code:	<input type="text" value="BMX"/>
Manufacturer Name:	<input type="text" value="BMW"/>

Manufacturer Contact

Name:	<input type="text" value="Thomas E. Hofmann"/>
Email Address:	<input type="text" value="thomas.hofmann@bmwna.com"/>
Phone:	<input type="text" value="201-571-5195"/>
Calendar Year complete application submitted to EPA:	<input type="text" value="2018"/>
Engine Family / Evaporative Family / Test Group:	<input type="text" value="KBMXC01.34K5"/>

Certificate Request Type (Industry Sector Code)

- | | |
|---|---|
| <input type="radio"/> On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V) | <input type="radio"/> Nonroad CI (L) |
| <input type="radio"/> On-Highway HDE Dyno Cert (Federal) (E, H) | <input type="radio"/> Nonroad SI (B, S) |
| <input type="radio"/> On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V) | <input type="radio"/> Locomotive (G, K) |
| <input checked="" type="radio"/> On-Highway Motorcycle (C) | <input type="radio"/> All Nonroad Recreational, excluding Marine engines (X, Y) |
| <input type="radio"/> On-Highway HDV Evap (F) | <input type="radio"/> All Marine (Including IMO) (M, N, W) |
| <input type="radio"/> On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V) | <input type="radio"/> Component Certification for Evaporative Emissions (P) |
| <input type="radio"/> On-Highway HDE Dyno Cert (California-Only) (E, H) | |

IMO Name (Required for dual US/IMO Marine Only):

ICI VIN Number (Required for ICIs Only):

Do you qualify for a Reduced Fee (RF)?

What is the total number of vehicles, engines, or units covered?:

What is the aggregate total retail value of the vehicles, engines or units covered?:

Payment Information

Amount Owed:	<input type="text" value="1,852.00"/>
Payment Type:	<input type="text" value="Offline ACH"/>

Comments:

EPA Form Number 3520-29

OMB Control No. 2060-0545

Approval expires 12/31/2019

The public reporting and recordkeeping burden for this collection of information is estimated to average 20 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.

EPA Form Number 3520-29

OMB Control No. 2060-0545

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CSI.1 General Information

US Manufacturer / US Importer	BMW
EPA Manufacturer Code	BMX
Enter the Manufacturer Code assigned by CARB, if any (Uppercase Letters Only):	BMW
Parent Company Name, if applicable	
Enter the date that the EPA certification fee was paid	02/15/2018
Model Year	2019
Select the Vehicle Category for This Engine Family	Class III Highway Motorcycle With Displacement of 280cc and Over
Select the applicable application type Enter the engine family that previously certified:	New
Enter the 12-character engine family for this application	KBMXC01.34K5
Enter the Permeation Family Name Does this Perm Family participate in Average Banking and Trading?	KBMXPP102BK5 No
Enter the Permeation Family Name Does this Perm Family participate in Average Banking and Trading?	KBMXPMETAL51 No
Does this EF participate in an EPA and/or CARB emission averaging program? If yes, does EF participate in an EPA and/or CARB emission averaging program? CARB corporate averaging plan engine family?	No No
Sales Areas of All Vehicles/Engines in This Engine Family	All Models Are 50 States
Are You a Small Volume Manufacturer Designated by EPA or CARB? (EPA-Only) Are you Certifying This Vehicle/Engine By Design	Regular Volume
Indicate the testing procedure applied for exhaust emissions values If Other, Please provide EPA/CARB approval ID for this testing procedure	40CFR86, Subpart E: Chassis test
Are you the original manufacturer of the certifying vehicle/engine?	Yes
Original Equipment Manufacturer #1	
Enter the full legal name of the vehicle original equipment manufacturer Enter the country where the vehicles were assembled Enter the full legal name of the engine original equipment manufacturer Enter the country where the engines were assembled	BMW AG Germany

Enter any comments that you want EPA/CARB to know regarding the above information

CSI.2A EPA Exhaust Emission Standards and Certification Levels

Exhaust Emissions Unit	g/km
HC	
Certification Level	
Emission Standard	
NO _x	
Certification Level	
HC+NO _x	
Certification Level	0.1
Emission Standard	0.8
Family Emission Limit	
CO	
Certification Level	0.2
Emission Standard	12.0
Family Emission Limit	
Applicant Notes	

CSI.2B CARB Emission Standards and Certification Levels

CARB HMC Early Compliance Multiplier	1.0
CARB Exhaust Emissions	
Exhaust Emissions Unit	G/KM
HC	
Certification Level	0.04
Emission Standard	
Family Emission Limit	
NO _x	
Certification Level	
HC+NO _x	
Certification Level	0.1
Emission Standard	0.8
Family Emission Limit	
CO	
Certification Level	0.2
Emission Standard	12
Emission Useful Life (years)	5
Emission Useful Life (km)	30000
Vehicle Evaporative Emissions (HMC Only)	
Diurnal + Hot Soak (Unit: g/test)	
Evaporative Family 1	
Evaporative Family Name	KBMXU0021K5X
Certification Level	0.4
Emission Standard	2.0
Emission Useful Life (years)	5
Emission Useful Life (km)	30000
Evaporative Family 2	
Evaporative Family Name	KBMXU0021K51
Certification Level	1.1

Emission Standard	2.0
Emission Useful Life (years)	5
Emission Useful Life (km)	30000
Applicant Notes	

CSI.3 Engine Family Description

Engine Family Useful Life Years Hours Kilometers	EPA Required Useful Life
Does this engine family have multiple operating fuels?	Single Fuel System
Fuel Type 1	
Primary Operating Fuel Type Fuel Type, If Other	Gasoline
Combustion Cycle Other	4-Stroke
Cylinder Arrangement Other	Horizontally Opposed (Flat)
Number of Cylinders Valves per Cylinder	2 4
Engine Type Other	Reciprocating (Otto Cycle)
Engine Cooling Media Other	Liquid Cooled
Does this engine family contain multiple displacements? Displacement Values	No 1254.0
New Technology If yes, explain	No
Applicant Notes	

CSI.4 Exhaust Emission Control Information

Exhaust ECS 1	
Is this engine family equipped with a catalytic converter? Enter the total number of catalytic converters (1 - 9) Select the applicable catalytic converter configuration Select the catalytic converter type used Catalyst Manufacturer Name Address	Yes 1 Single Three Way Catalyst (TWC), single-bed, closed-loop warm up UMICORE AG & Co. KG Rodenbacher Chaussee 4 PO-Box 1351 Hanau Bavaria 63457 DE
Does the engine family use an Exhaust Gas Recirculation (EGR) technology as part of the Emission Control System? Enter a description of the EGR technology used	No
	Multiport FI

Select the applicable engine fuel system type If Other, Enter a description of the fuel system Enter the number of carburetors Enter the number of barrels per carburetor	
Select the method of air aspiration for the engine If Other, Enter a description of the method of engine aspiration	Naturally Aspirated
Select the Charge Air Cooler Type	No Air Cooler
Select the type of electronic engine control module	Engine Control Module
Select the applicable method of air injection methodology If Other, enter the applicable method of air injection methodology	Not Applicable
Are there any air/fuel feedback sensor used on this engine family? Sensor Type Sensor Type, if Other Specify the number of feedback sensor(s) used Select the configuration of the feedback sensors arrangement	Yes Heated Oxygen Sensor Sensor Type, if Other 3 Parallel
Applicant Notes	ECU Manufacturer: BOSCH/ AECD List can be found in the attachments.

CSI.5 Exhaust Emission Data Vehicle/Engine (EDV/E) and Emissions Test Data

Test Vehicle #1	
EDV ID	WB10J5305JZF77075
EDV Type	New
Original EF Name That Contains EDV Data	
DDV Engine Family if Different from EDV Engine Family	
Configuration ID	A74B12M
Model Name	R1250 GS Adventure
Tire Pressure (in PSI)	42.1
Road Load Force (N)	154
Rated Power	100
Rated Power Unit	kW
RPM at Rated Power	7750
Cylinder (Block) Arrangement	Horizontally Opposed (Flat)
Number of Cylinders	2
ECS Number (From Tab 4)	ECS 1
Displacement (cc)	1254
Transmission	Manual
Number of Gears	6
N/V Ratio	35.36
Curb Mass (in kg)	268
Equivalent Inertia Mass (in kg)	390
Exhaust Test #1	
Date	12/07/2017

Test Identification Number	C03010493
Test By	Manufacturer Conducted Test
Test For	Certification Emission Test + Durability
Test Fuel	Other
Test Measurement Unit	Kilometers
Tested at Cumulative Km or Hr	3655
Raw Exhaust Emission Test Results	
Test Unit	g/km
HC	0.037
NO_x	0.023
HC + NO_x	0.060
CO	0.107
CO₂	127.4
Exhaust Test #2	
Date	01/12/2018
Test Identification Number	C03010638
Test By	Manufacturer Conducted Test
Test For	Certification Emission Test + Durability
Test Fuel	Other
Test Measurement Unit	Kilometers
Tested at Cumulative Km or Hr	10065
Raw Exhaust Emission Test Results	
Test Unit	g/km
HC	0.039
NO_x	0.018
HC + NO_x	0.057
CO	0.135
CO₂	123.9
Exhaust Test #3	
Date	01/18/2018
Test Identification Number	C03010689
Test By	Manufacturer Conducted Test
Test For	Certification Emission Test + Durability
Test Fuel	Other
Test Measurement Unit	Kilometers
Tested at Cumulative Km or Hr	10101
Raw Exhaust Emission Test Results	
Test Unit	g/km
HC	0.038
NO_x	0.022
HC + NO_x	0.061
CO	0.117
CO₂	123.3
Exhaust Test #4	
Date	02/06/2018
Test Identification Number	C03010800
Test By	Manufacturer Conducted Test
Test For	Certification Emission Test + Durability
Test Fuel	Other
Test Measurement Unit	Kilometers
Tested at Cumulative Km or Hr	15049
Raw Exhaust Emission Test Results	

Test Unit	g/km
HC	0.040
NO _x	0.023
HC + NO _x	0.062
CO	0.160
CO ₂	122.4
For EPA Certification (50 States and 49 State)	
Certification Level Unit (Specified on CSI.2a)	G/KM
HC	
NO _x	
HC + NO _x	0.1
CO	0.2
End of Useful Life Emissions Value	Extrapolated from test value
HC	0.040
NO _x	0.023
HC + NO _x	0.062
CO	0.230
EPA Deterioration Factor	
DF Type	Multiplicative
HC	1.00
NO _x	1.00
HC + NO _x	
CO	1.439
For CARB Certification (50 State or CA only)	
Certification Level Unit (Specified on CSI.2b)	G/KM
HC	0.04
NO _x	
HC + NO _x	0.1
CO	0.2
Enter the Test Number Associated to the Official Certification Level	Test #4
HC	0.040
NO _x	0.023
HC + NO _x	0.062
CO	0.160
CO ₂	122.4
Extrapolated or End of Useful-Life Data (Hr or Km) Interval	30000
HC	0.100
NO _x	0.100
HC + NO _x	0.200
CO	0.221
Interpolated Total Test Interval (Hr or Km)	15000
HC	0.100
NO _x	0.100
HC + NO _x	0.200
CO	0.153
Modified DF: Interpolated Minimum Test Distance (Hr or Km)	

	HC	
	NO _x	
	HC + NO _x	
	CO	
CARB Deterioration Factor (Additive)		
	HC	
	NO _x	
	HC + NO _x	
	CO	
CARB Deterioration Factor (Multiplicative)		
	HC	1.00
	NO _x	1.00
	HC + NO _x	
	CO	1.439
End of Useful Life Emissions Value	Calculated by applying DF	
	HC	0.040
	NO _x	0.023
	HC + NO _x	0.062
	CO	0.230
Manufacturer Comments	Fuel specification can be found in the attachments.	

CSI.5A Federal Mandatory Greenhouse Gas (GHG) Reporting

Greenhouse Gas 1	
GHG Name	CO2 (Carbon Dioxide)
GHG Value	127.4
Unit of GHG Value	grams/kilometer
Measured/Estimated at Distance (km)	3655
By Method	Tested result from the EDV(s) of the Engine Family
Test Vehicle ID	WB10J5305JZF77075
Reference/Citations	
Test/Estimation Date	12/07/2017
Greenhouse Gas 2	
GHG Name	CH4 (Methane)
GHG Value	0.006
Unit of GHG Value	grams/kilometer
Measured/Estimated at Distance (km)	3655
By Method	Tested result from the EDV(s) of the Engine Family
Test Vehicle ID	WB10J5305JZF77075
Reference/Citations	
Test/Estimation Date	12/07/2017
Greenhouse Gas 3	
GHG Name	N2O (Nitrous Oxide)
GHG Value	0.004
Unit of GHG Value	grams/kilometer
Measured/Estimated at Distance (km)	3655
By Method	Derived results based on EPA GHG default factor
Test Vehicle ID	
Reference/Citations	US EPA GHC Inventory Guidance
Test/Estimation Date	
Applicant notes for GHG data:	

CSI.6A Permeation Emissions Control / Test Data

(Optional Until Model Year 2008)

Fuel Tank 1	
Permeation Family Name	KBMXPP102BK5
Certification Level (g/m²/day)	1.0
Emission Standard (g/m²/day)	1.5
Family Emission Limit (g/m²/day)	
Permeation Emissions Certification Method	E = Emission tests
Fuel Tank Manufacturer	ELKAMET
Certify by Design	
Select the applicable permeation emission certify-by-design technology category. Other	
Certify by Emission Testing	
Use Carry-over Test Data?	Yes
If carryover, from permeation family	JBMXPP102BK5
Carryover DF	No
If carryover, from permeation family	
Tank Material	Plastic
Tank Material if Other	
Control Strategy	Inherently Low/Zero Permeation Material
Least Thickness (mm)	1
Least Barrier Weight (%) Note: If Tank Material is not "Metal", one of the three "Least Barrier" fields is required.	
Least Barrier Mol (%)	
Least Barrier Thickness (mm)	
Production Method	Blow-Molded Tank
Production Method if Other	
Test Data (g/m²/day)	0.01
DF (g/m²/day)	
Certify by Certified Tank	
EPA Certificate Number	
Fuel Tank 2	
Permeation Family Name	KBMXPMETAL51
Certification Level (g/m²/day)	1.5
Emission Standard (g/m²/day)	1.5
Family Emission Limit (g/m²/day)	
Permeation Emissions Certification Method	D = Design technologies (per 40 CFR 1051.245 Table 1)
Fuel Tank Manufacturer	BMW
Certify by Design	
Select the applicable permeation emission certify-by-design technology category. Other	based on 40CFR1051.245, Table 1 (ii)
Certify by Emission Testing	
Use Carry-over Test Data?	
If carryover, from permeation family	
Carryover DF	
If carryover, from permeation family	

Tank Material Tank Material if Other Control Strategy Least Thickness (mm) Least Barrier Weight (%) Note: If Tank Material is not "Metal", one of the three "Least Barrier" fields is required. Least Barrier Mol (%) Least Barrier Thickness (mm) Production Method Production Method if Other Test Data (g/m²/day) DF (g/m²/day)	
Certify by Certified Tank	
EPA Certificate Number	
Fuel Line 1	
Certification Level (g/m²/day)	15
Emission Standard (g/m²/day)	15
Permeation Emissions Certification Method	D = Design technologies (per 40 CFR 1051.245 Table 2)
Fuel Line Manufacturer	ContiTech
Certify by Design	
Select the applicable permeation emission certify-by-design technology category. Other	based on 40CFR1051.245, Table 1 (i)
Certify by Emission Testing	
Use Carry-over Test Data? If carryover, from permeation family	
Carryover DF If carryover, from permeation family	
Fuel Line Material Fuel Line Material if Other Least Thickness (mm) Test Results (g/m²/day) DF (g/m²/day)	
Certify by Certified Fuel Line	
EPA Certificate Number	
Fuel Line 2	
Certification Level (g/m²/day)	5.5
Emission Standard (g/m²/day)	15
Permeation Emissions Certification Method	E = Emission tests
Fuel Line Manufacturer	ContiTech
Certify by Design	
Select the applicable permeation emission certify-by-design technology category. Other	
Certify by Emission Testing	
Use Carry-over Test Data? If carryover, from permeation family	Yes JBMXPP102BK5

Carryover DF If carryover, from permeation family	No
Fuel Line Material Fuel Line Material if Other Least Thickness (mm) Test Results (g/m²/day) DF (g/m²/day)	Plastic 3 0.01
Certify by Certified Fuel Line	
EPA Certificate Number	
Comments	

CSI.6B Evaporative Family Description

Evaporative Family#1	
Evaporative Family	KBMXU0021K5X
Evaporative Family Group	
Vapor Storage Device (canister)	Yes
Number of Canisters	1
Canister Configuration	Single
Canister(s) Total Working Capacity (g)	21
Canister(s) Total Medium Volume (cc)	300
Canister Storage Medium	Carbon
Canister Housing Material	Plastic
Canister Vent System Configuration	Closed Bottom
Vapor Storage Device (crankcase)	No
Vapor Storage Device (intake manifold element)	No
Vapor Storage Device (charcoal air cleaner)	Yes
Purge System Configuration	Purged Control
Individual Fuel Tanks in this Evaporative Family	
Tank Material / Volume Fuel Tank #1	
Steel or Plastic	Plastic
50% Fill Volume (liters)	10
Fuel Tank Material(s) Description	Plastic
Fuel Hose Material(s) Description	Rubber
Comments	
Evaporative Family#2	
Evaporative Family	KBMXU0021K51
Evaporative Family Group	
Vapor Storage Device (canister)	Yes
Number of Canisters	1
Canister Configuration	Single
Canister(s) Total Working Capacity (g)	21
Canister(s) Total Medium Volume (cc)	300
Canister Storage Medium	Carbon
Canister Housing Material	Plastic
Canister Vent System Configuration	Closed Bottom
Vapor Storage Device (crankcase)	No
	No

Vapor Storage Device (intake manifold element)	
Vapor Storage Device (charcoal air cleaner)	Yes
Purge System Configuration	Purged Control
Individual Fuel Tanks in this Evaporative Family	
Tank Material / Volume	
Fuel Tank #1	
Steel or Plastic	Steel
50% Fill Volume (liters)	15
Fuel Tank Material(s) Description	Steel
Fuel Hose Material(s) Description	Rubber
Comments	

CSI.6C Evaporative Emission Data Vehicle (EDV) and Emission Test Data

Evaporative EDV Set #1	
Evaporative Family	KBMXU0021K5X
EDV Evaporative Type	Carryover
EDV Carryover or Carry Across Evaporative Family	JBMXU0021K5X
Evaporative Family Group	
Evaporative Test Vehicle ID	V204771
Evaporative Test Vehicle Model	R1200GS
Engine Displacement (cc)	1170
50%-Fill Fuel Tank(s) Capacity (liters)	10
100%-Fill Fuel Tank(s) Capacity (liters)	21
Evaporative Emission Test #1	
General Evaporative Emission Test Information	
Test Date	09/27/2012
Test ID Number	1478
Test By	Manufacturer
Test Fuel	Other
Test For	Certification Emission Test
Test Cycle	SHED
Raw Evaporative Testing Result (g/test)	
Diurnal	0.18
Hot Soak	0.05
Diurnal + Hot Soak	0.23
Enter the Evaporative Test Number as the Official Raw Evaporative Emission Certification Level (without DF)	Test #1
Diurnal	0.18
Hot Soak	0.05
Diurnal + Hot Soak	0.23
Overall Evaporative Emission Deterioration Factor	0.09
Overall Evaporative Emission Certification Level (with DF)	0.32
Manufacturer Comments	Fuel specifications can be found in the attachments.

Evaporative EDV Set #2	
Evaporative Family	KBMXU0021K51
EDV Evaporative Type	Carryover
EDV Carryover or Carry Across Evaporative Family	JBMXU0021K51
Evaporative Family Group	
Evaporative Test Vehicle ID	V205743
Evaporative Test Vehicle Model	R1200GS Adventure
Engine Displacement (cc)	1170
50%-Fill Fuel Tank(s) Capacity (liters)	15
100%-Fill Fuel Tank(s) Capacity (liters)	30
Evaporative Emission Test #1	
General Evaporative Emission Test Information	Test Date 06/26/2013 Test ID Number 1006 Test By Manufacturer Test Fuel Other Test For Certification Emission Test Test Cycle SHED
Raw Evaporative Testing Result (g/test)	Diurnal 1.02 Hot Soak 0.06 Diurnal + Hot Soak 1.08
Enter the Evaporative Test Number as the Official Raw Evaporative Emission Certification Level (without DF)	Test #1 Diurnal 1.02 Hot Soak 0.06 Diurnal + Hot Soak 1.08
Overall Evaporative Emission Deterioration Factor	0.0
Overall Evaporative Emission Certification Level (with DF)	1.1
Manufacturer Comments	Fuel specifications can be found in the attachments.

CSI.6D Evaporative Durability Data Vehicle (DDV) and Durability Test Data

Evaporative DDV Set #1	
Evaporative Family	KBMXU0021K5X
DDV Evaporative Type	Carryover
DDV Carryover or Carry Across Evaporative Family	JBMXU0021K5X
Evaporative Family Group	
DF Test Vehicle ID	V204771
Evaporative Test Vehicle Model	R1200GS
Engine Displacement (cc)	1170
50%-Fill Fuel Tank(s) Capacity (liters)	10
100%-Fill Fuel Tank(s) Capacity (liters)	21

Evaporative DDV Comments	
Using assigned CARB Bench DF	No
DF Test Vehicle ID	V204772
Evaporative Bench DF Test #1	
Test Date	08/09/2012
Test ID Number	1456
Test Fuel	Other
Test Point	3500
THC Raw Evaporative Emission Value (g/test)	0.196
Evaporative Bench DF Test #2	
Test Date	08/29/2013
Test ID Number	1468
Test Fuel	Other
Test Point	10000
THC Raw Evaporative Emission Value (g/test)	0.149
Evaporative Bench DF Test #3	
Test Date	09/18/2012
Test ID Number	1476
Test Fuel	Other
Test Point	15000
THC Raw Evaporative Emission Value (g/test)	0.195
Bench Interpolated Value (typically at $1/2$ useful-life mileage test point)	15000
Bench Interpolated Value for Total Hydrocarbons (typically at $1/2$ useful-life mileage test point)	0.177
Bench Extrapolated Value (typically at useful-life mileage test point)	30000
Bench Extrapolated Value for Total Hydrocarbons (typically at useful-life mileage test point)	0.171
Bench Evaporative Deterioration Factor for Total Hydrocarbons	0.01
DF Test Vehicle ID	V204772
Evaporative Vehicle DF Test #1	
Test Date	07/31/2012
Test ID Number	1451
Test Fuel	Other
Test Point	3500
THC Raw Evaporative Emission Value (g/test)	0.084
Evaporative Vehicle DF Test #2	
Test Date	08/24/2012
Test ID Number	1463
Test Fuel	Other
Test Point	10037
THC Raw Evaporative Emission Value (g/test)	0.187
Evaporative Vehicle DF Test #3	
Test Date	08/28/2012
Test ID Number	1466
Test Fuel	Other
Test Point	10070

THC Raw Evaporative Emission Value (g/test)	0.113
Evaporative Vehicle DF Test #4	
Test Date	09/27/2012
Test ID Number	1478
Test Fuel	Other
Test Point	15038
THC Raw Evaporative Emission Value (g/test)	0.225
Vehicle Interpolated Value (typically at $1/2$ useful-life mileage test point)	15000
Vehicle Interpolated Value for Total Hydrocarbons (typically at $1/2$ useful-life mileage test point)	0.217
Vehicle Extrapolated Value (typically at useful-life mileage test point)	30000
Vehicle Extrapolated Value for Total Hydrocarbons (typically at useful-life mileage test point)	0.397
Vehicle Evaporative Deterioration Factor for Total Hydrocarbons	0.18
Overall Evaporative Vehicle DF [(bench + vehicle)/2]	0.09
Outlier Information	
Manufacturer Comments - Bench	Fuel specifications can be found in the attachments.
Manufacturer Comments - Vehicle	Fuel specifications can be found in the attachments.
Evaporative DDV Set #2	
Evaporative Family	KBMXU0021K51
DDV Evaporative Type	Carryover
DDV Carryover or Carry Across Evaporative Family	JBMXU0021K51
Evaporative Family Group	
DF Test Vehicle ID	V205743
Evaporative Test Vehicle Model	R1200GS Adv.
Engine Displacement (cc)	1170
50%-Fill Fuel Tank(s) Capacity (liters)	15
100%-Fill Fuel Tank(s) Capacity (liters)	30
Evaporative DDV Comments	
Using assigned CARB Bench DF	No
DF Test Vehicle ID	V205478
Evaporative Bench DF Test #1	
Test Date	06/10/2013
Test ID Number	1159
Test Fuel	Other
Test Point	3500
THC Raw Evaporative Emission Value (g/test)	0.046
Evaporative Bench DF Test #2	
Test Date	07/17/2013
Test ID Number	1015
Test Fuel	Other
Test Point	10000
THC Raw Evaporative Emission Value (g/test)	0.042

Evaporative Bench DF Test #3	
Test Date	08/07/2013
Test ID Number	0949
Test Fuel	Other
Test Point	15000
THC Raw Evaporative Emission Value (g/test)	0.042
Bench Interpolated Value (typically at $1/2$ useful-life mileage test point)	15000
Bench Interpolated Value for Total Hydrocarbons (typically at $1/2$ useful-life mileage test point)	0.042
Bench Extrapolated Value (typically at useful-life mileage test point)	30000
Bench Extrapolated Value for Total Hydrocarbons (typically at useful-life mileage test point)	0.037
Bench Evaporative Deterioration Factor for Total Hydrocarbons	0.01
DF Test Vehicle ID	V205743
Evaporative Vehicle DF Test #1	
Test Date	05/08/2013
Test ID Number	1010
Test Fuel	Other
Test Point	3500
THC Raw Evaporative Emission Value (g/test)	1.017
Evaporative Vehicle DF Test #2	
Test Date	06/06/2013
Test ID Number	1135
Test Fuel	Other
Test Point	10037
THC Raw Evaporative Emission Value (g/test)	0.261
Evaporative Vehicle DF Test #3	
Test Date	06/12/2013
Test ID Number	1127
Test Fuel	Other
Test Point	10070
THC Raw Evaporative Emission Value (g/test)	0.219
Evaporative Vehicle DF Test #4	
Test Date	06/26/2013
Test ID Number	1127
Test Fuel	Other
Test Point	15038
THC Raw Evaporative Emission Value (g/test)	1.079
Vehicle Interpolated Value (typically at $1/2$ useful-life mileage test point)	15000
Vehicle Interpolated Value for Total Hydrocarbons (typically at $1/2$ useful-life mileage test point)	0.622
Vehicle Extrapolated Value (typically at useful-life mileage test point)	30000
	0.560

Vehicle Extrapolated Value for Total Hydrocarbons (typically at useful-life mileage test point)	
Vehicle Evaporative Deterioration Factor for Total Hydrocarbons	0.0
Overall Evaporative Vehicle DF [(bench + vehicle)/2]	0.01
Outlier Information	
Manufacturer Comments - Bench	Fuel specifications can be found in the attachments.
Manufacturer Comments - Vehicle	Fuel specifications can be found in the attachments.

CSI.7 Models Covered

Vehicle/Engine Models Covered	
Model #1	
Final Assembly Manufacturer Name	BMW
Manufacturer Model Name	K51MUE
Commercial / Advertised Model Name	R1250GS Adventure
Engine Code	A74B12M
Vehicle Category	Class III Highway Motorcycle With Displacement of 280cc and Over
Evaporative Family (CARB)	KBMXU0021K51
Number of Evaporative Canisters (CARB)	1
Bore (mm)	102.5
Displacement (cc)	1254
Stroke (mm)	76
Basic Ignition Timing (degrees, BTDC)	0.1
Rated Power (kW)	100
RPM @ Rated Power	7750
Rated Torque (nt-m)	143
RPM @ Rated Torque	6250
N/V Ratio	35.36
Curb Mass (kg)	268
Equivalent Inertial Mass (kg)	350
Transmission (e.g. M5, A3, etc.)	M6
Vehicle Emission Compliance Information (VECI) Label Type	50-state sales w/ 50-state Label
Fuel System	Single Fuel System
Operating Fuel	Gasoline
Emission Control System (model / rating specific)	ECS 1
Projected Sales (CBI) - CA Only	
Projected Sales (CBI) - US Total (includes CA Sales)	
Projected Sales (CBI) - US (49-States)	
Permeation Family Name	KBMXPMETAL51
CARB-Only ATV Specification (Category ATV.A)	
50" or Less in Width?	
4 or More Low Pressure Tires?	
Seat Straddled by Operator?	

Without Passenger Seating?	
Handlebar?	
Manufacturer Previously Exempted?	
Internal Combustion Engine?	
4 or more wheels?	
Bench or bucket seating for 2 or more persons?	
Steering Wheel?	
Rear Payload Capacity >= 350lbs., or seating for 6 or more passengers?	
Designed for operation over rough terrain?	
Internal combustion engine <= 1.0L?	
Max power <= 30 kW?	
Can Travel >= 25 mph?	
4 wheels?	
Bench or bucket seating for 1 or more persons?	
Rear Payload Capacity <= 600 lbs., or N/A to SCAR-like vehicle?	
Designed for operation over rough terrain or sand?	
Can travel >=25 mph, or N/A to SCAR-like vehicle?	
Designed primarily for operation over sand dunes?	
Internal combustion engine > 1.0L?	
Applicant Notes	for basic ignition timing please see: Ignition-timing
Model #2	
Final Assembly Manufacturer Name	BMW
Manufacturer Model Name	K52TUE2
Commercial / Advertised Model Name	R1250RT
Engine Code	A74B12M
Vehicle Category	Class III Highway Motorcycle With Displacement of 280cc and Over
Evaporative Family (CARB)	KBMXU0021K5X
Number of Evaporative Canisters (CARB)	1
Bore (mm)	102.5
Displacement (cc)	1254
Stroke (mm)	76
Basic Ignition Timing (degrees, BTDC)	0.1
Rated Power (kW)	100
RPM @ Rated Power	7750
Rated Torque (nt-m)	143
RPM @ Rated Torque	6250
N/V Ratio	33.72
Curb Mass (kg)	279
Equivalent Inertial Mass (kg)	360
Transmission (e.g. M5, A3, etc.)	M6
Vehicle Emission Compliance Information (VECI) Label Type	50-state sales w/ 50-state Label
Fuel System	Single Fuel System
Operating Fuel	Gasoline

Emission Control System (model / rating specific)	ECS 1
Projected Sales (CBI) - CA Only	
Projected Sales (CBI) - US Total (includes CA Sales)	
Projected Sales (CBI) - US (49-States)	
Permeation Family Name	KBMXPP102BK5
CARB-Only ATV Specification (Category ATV.A)	
50" or Less in Width?	
4 or More Low Pressure Tires?	
Seat Straddled by Operator?	
Without Passenger Seating?	
Handlebar?	
Manufacturer Previously Exempted?	
Internal Combustion Engine?	
4 or more wheels?	
Bench or bucket seating for 2 or more persons?	
Steering Wheel?	
Rear Payload Capacity >= 350lbs., or seating for 6 or more passengers?	
Designed for operation over rough terrain?	
Internal combustion engine <= 1.0L?	
Max power <= 30 kW?	
Can Travel >= 25 mph?	
4 wheels?	
Bench or bucket seating for 1 or more persons?	
Rear Payload Capacity <= 600 lbs., or N/A to SCAR-like vehicle?	
Designed for operation over rough terrain or sand?	
Can travel >=25 mph, or N/A to SCAR-like vehicle?	
Designed primarily for operation over sand dunes?	
Internal combustion engine > 1.0L?	
Applicant Notes	for basic ignition timing please see: Ignition-timing
Model #3	
Final Assembly Manufacturer Name	BMW
Manufacturer Model Name	K53MUE
Commercial / Advertised Model Name	R1250R
Engine Code	A74B12M
Vehicle Category	Class III Highway Motorcycle With Displacement of 280cc and Over
Evaporative Family (CARB)	KBMXU0021K5X
Number of Evaporative Canisters (CARB)	1
Bore (mm)	102.5
Displacement (cc)	1254
Stroke (mm)	76
	0.1

Basic Ignition Timing (degrees, BTDC)	
Rated Power (kW)	100
RPM @ Rated Power	7750
Rated Torque (nt-m)	143
RPM @ Rated Torque	6250
N/V Ratio	34.53
Curb Mass (kg)	239
Equivalent Inertial Mass (kg)	320
Transmission (e.g. M5, A3, etc.)	M6
Vehicle Emission Compliance Information (VECI) Label Type	50-state sales w/ 50-state Label
Fuel System	Single Fuel System
Operating Fuel	Gasoline
Emission Control System (model / rating specific)	ECS 1
Projected Sales (CBI) - CA Only	
Projected Sales (CBI) - US Total (includes CA Sales)	
Projected Sales (CBI) - US (49-States)	
Permeation Family Name	KBMXPP102BK5
CARB-Only ATV Specification (Category ATV.A)	
50" or Less in Width?	
4 or More Low Pressure Tires?	
Seat Straddled by Operator?	
Without Passenger Seating?	
Handlebar?	
Manufacturer Previously Exempted?	
Internal Combustion Engine?	
4 or more wheels?	
Bench or bucket seating for 2 or more persons?	
Steering Wheel?	
Rear Payload Capacity >= 350lbs., or seating for 6 or more passengers?	
Designed for operation over rough terrain?	
Internal combustion engine <= 1.0L?	
Max power <= 30 kW?	
Can Travel >= 25 mph?	
4 wheels?	
Bench or bucket seating for 1 or more persons?	
Rear Payload Capacity <= 600 lbs., or N/A to SCAR-like vehicle?	
Designed for operation over rough terrain or sand?	
Can travel >=25 mph, or N/A to SCAR-like vehicle?	
Designed primarily for operation over sand dunes?	
Internal combustion engine > 1.0L?	
Applicant Notes	for basic ignition timing please see: Ignition-timing

Model #4	
Final Assembly Manufacturer Name	BMW
Manufacturer Model Name	K54MUE
Commercial / Advertised Model Name	R1250RS
Engine Code	A74B12M
Vehicle Category	Class III Highway Motorcycle With Displacement of 280cc and Over
Evaporative Family (CARB)	KBMXU0021K5X
Number of Evaporative Canisters (CARB)	1
Bore (mm)	102.5
Displacement (cc)	1254
Stroke (mm)	76
Basic Ignition Timing (degrees, BTDC)	0.1
Rated Power (kW)	100
RPM @ Rated Power	7750
Rated Torque (nt-m)	143
RPM @ Rated Torque	6250
N/V Ratio	34.53
Curb Mass (kg)	243
Equivalent Inertial Mass (kg)	320
Transmission (e.g. M5, A3, etc.)	M6
Vehicle Emission Compliance Information (VECI) Label Type	50-state sales w/ 50-state Label
Fuel System	Single Fuel System
Operating Fuel	Gasoline
Emission Control System (model / rating specific)	ECS 1
Projected Sales (CBI) - CA Only	
Projected Sales (CBI) - US Total (includes CA Sales)	
Projected Sales (CBI) - US (49-States)	
Permeation Family Name	KBMXPP102BK5
CARB-Only ATV Specification (Category ATV.A)	
50" or Less in Width?	
4 or More Low Pressure Tires?	
Seat Straddled by Operator?	
Without Passenger Seating?	
Handlebar?	
Manufacturer Previously Exempted?	
Internal Combustion Engine?	
4 or more wheels?	
Bench or bucket seating for 2 or more persons?	
Steering Wheel?	
Rear Payload Capacity >= 350lbs., or seating for 6 or more passengers?	
Designed for operation over rough terrain?	
Internal combustion engine <= 1.0L?	
Max power <= 30 kW?	

Can Travel >= 25 mph?	
4 wheels?	
Bench or bucket seating for 1 or more persons?	
Rear Payload Capacity <= 600 lbs., or N/A to SCAR-like vehicle?	
Designed for operation over rough terrain or sand?	
Can travel >=25 mph, or N/A to SCAR-like vehicle?	
Designed primarily for operation over sand dunes?	
Internal combustion engine > 1.0L?	
Applicant Notes	for basic ignition timing please see: Ignition-timing
Model #5	
Final Assembly Manufacturer Name	BMW
Manufacturer Model Name	K50TUE2
Commercial / Advertised Model Name	R1250GS
Engine Code	A74B12M
Vehicle Category	Class III Highway Motorcycle With Displacement of 280cc and Over
Evaporative Family (CARB)	KBMXU0021K5X
Number of Evaporative Canisters (CARB)	1
Bore (mm)	102.5
Displacement (cc)	1254
Stroke (mm)	76
Basic Ignition Timing (degrees, BTDC)	0.1
Rated Power (kW)	100
RPM @ Rated Power	7750
Rated Torque (nt-m)	143
RPM @ Rated Torque	6250
N/V Ratio	35.36
Curb Mass (kg)	249
Equivalent Inertial Mass (kg)	330
Transmission (e.g. M5, A3, etc.)	M6
Vehicle Emission Compliance Information (VECI) Label Type	50-state sales w/ 50-state Label
Fuel System	Single Fuel System
Operating Fuel	Gasoline
Emission Control System (model / rating specific)	ECS 1
Projected Sales (CBI) - CA Only	
Projected Sales (CBI) - US Total (includes CA Sales)	
Projected Sales (CBI) - US (49-States)	
Permeation Family Name	KBMXPP102BK5
CARB-Only ATV Specification (Category ATV.A)	
50" or Less in Width?	
4 or More Low Pressure Tires?	
Seat Straddled by Operator?	

Without Passenger Seating?	
Handlebar?	
Manufacturer Previously Exempted?	
Internal Combustion Engine?	
4 or more wheels?	
Bench or bucket seating for 2 or more persons?	
Steering Wheel?	
Rear Payload Capacity >= 350lbs., or seating for 6 or more passengers?	
Designed for operation over rough terrain?	
Internal combustion engine <= 1.0L?	
Max power <= 30 kW?	
Can Travel >= 25 mph?	
4 wheels?	
Bench or bucket seating for 1 or more persons?	
Rear Payload Capacity <= 600 lbs., or N/A to SCAR-like vehicle?	
Designed for operation over rough terrain or sand?	
Can travel >=25 mph, or N/A to SCAR-like vehicle?	
Designed primarily for operation over sand dunes?	
Internal combustion engine > 1.0L?	
Applicant Notes	for basic ignition timing please see: Ignition-timing

Engine Family: **KBMXC01.34K5**

Motorcycle Engine Family Information Form

1. Manufacturer: BMW

2. Certification Contact Person, address, phone, and fax:

Mr. Michael Hofmann

BMW of North America, LLC.

Woodcliff Lake, N.J. 07677

Phone No. 201-571 5192

Fax No. 614-789 7219

3. Model Year: 2019

4. Process Code: new
(new, correction, revision, r/c, f/f. etc.)

5. Engine Family: KBMXC01.34K5

50s Engine Code:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
49s Engine Code:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Calif. Engine Code:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

6. Emission Control System: MFI, TWC, 3HO2S, EM

7. Calif. Designated Standard: 0.8 g/km HC+NOx

8. Projected Annual Sales: total: _____
CONFIDENTIAL California: _____

9. New Technology ☐ Yes ☒ No
If yes, cite the correspondence or reference the
submittal document:

10. Displacement: 1254cc

11. Number of Cylinders: 2

12. Cylinder Arrangement: opposed

13. Cylinder Head Configuration: DOHC

14. Type of Cooling: Water

15. Combustion Cycle: 4 stroke

16. Method of Aspiration: natural

17. Fuel System: FI

18. Number of Catalytic Converters: 1

19. Adjustable Parameters: ☒ Yes ☐ No

Parameter(s)	Adjustable Range (or NA)	Tamper Resistance Method (or NA)	Method Approved
Ignition timing	NA	NA	
Idle speed	1050 +/- 50 RPM	NA	

20. AECDs In the Emission Control Systems: ☒ Yes ☐ No

Exhaust System	Evaporative System
AECDS In System: <u>See AECD List in the attachment</u> _____ _____ _____ _____ _____ _____	AECDS In System: <u>See AECD List in the attachment</u> _____ _____ _____ _____ _____

Engine Family: **KBMXC01.34K5**

Revised:

21. Carburetor: ☐ Yes ☒ No

Number of Carburetors:	_____	Idle Circuit:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Number of barrels per carburetor:	_____	Fast idle Circuit:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Feedback control:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other subsystems (Specify):	_____
Use of heat spacer:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Used in previous/other vehicle models:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Float Bowl Vent Control:	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, last year used:	_____

22. Fuel Injection: ☒ Yes ☐ No

Type:	MFI	Used in previous/other vehicle models:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Feedback Control:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, last year used:	_____

23. Oxygen Sensor (O2S): ☒ Yes ☐ No

Type: Heated:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Location: Port	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Unheated:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Exhaust Manifold:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Other:	_____	Other (specify):	_____
(specify, e.g. universal or A/F ratio sensor)		Used in previous/other vehicle models:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		If yes, last year used:	_____

24. Secondary Air Injection: ☐ Yes ☒ No

Type: Pump	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sensed parameters:	
Pulsed	<input type="checkbox"/> Yes <input type="checkbox"/> No	Coolant temp	<input type="checkbox"/> Yes <input type="checkbox"/> No
Point of Injection:		Engine RPM	<input type="checkbox"/> Yes <input type="checkbox"/> No
Port	<input type="checkbox"/> Yes <input type="checkbox"/> No	MAP	<input type="checkbox"/> Yes <input type="checkbox"/> No
Exh. Manifold	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other (specify):	_____
Other (specify)	_____	Used in previous/other vehicle models:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Method of modulation:		If yes, last year used:	_____
Vacuum	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Solenoid	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Other (specify)	_____		

25. Catalytic Converter

Type: (use J1930 terminology)	_____	Number of Cells: (per cm ²)	31
Number of Catalysts:	1	Containment: Wire mesh	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Arrangement: (Series, Parallel, other)	Single	Other (specify)	welded
Location of Catalytic Converter	Manifold	Physical Description Diameter _____ Length _____ Volume _____ Washcoat Specific surface area _____ Total active surface area _____ Active Material CONFIDENTIAL Composition _____ Ratio _____ Loading (g/l) _____ _____ _____	
Used in previous/other vehicle models:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, last year used:	_____		
Catalyst manufacturer:	Umicore AG (Germany)		
Substrate:			
Configuration: Pellet	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Honeycomb	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Composition: Ceramic	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Metallic	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Other (specify)	_____		

26. High Altitude Performance Adjustment: ☐ Yes ☒ No

Procedure requires the use of optional parts:		
Altitude:	Part Description:	Item Number in Part Number Summary Form

Procedure requires parameter adjustment:		
Altitude:	Parameter Adjusted:	Adjustment Specification:

Motorcycle Test Information Form

27. Are you carrying over test results from a previously certified family? ☐ Yes ☒ No

a) If yes, indicate family name: _____

b) Is the family being certified identical to the family from which the data is being carried over?

☐ Yes ☒ No

28. Model Designation of Test Vehicle: R1250GS Adv.

29. Test Information Number: K51MUE

30. Vehicle ID: WB10J5305JZF77075

31. Service Accumulation Duration (km) 15000

32. Maximum Rated Power: 100 kW / 7750 rpm

33. Displacement: 1254 cc

34. Certification Fuel: 91 RON

35. Test Data Set: 1

36. Road Load: 153.8

37. Inertia Mass: 390

38. N/V: 35,36

39. EVAP. Bench Test Method Approved:

Date: 2018

Reference: V210056

40. Unscheduled Maintenance: ☐ Yes ☒ No

41. If yes, Vehicle Log provided: _____

42. Exhaust Emission Deterioration Factors:

		Emission Values		
Test Number	System Kilometers	HC	CO	NOx
1	3655	0,037	0,107	0,023
2	10065	0,039	0,135	0,018
3	10101	0,038	0,117	0,022
4	15049	0,040	0,160	0,023
5				
6				
Interpolated Values at <u>15 000</u> km:		HC = <u>0,100</u>	CO = <u>0,153</u>	NOx = <u>0,100</u>
Extrapolated Values at <u>30 000</u> km:		HC = <u>0,100</u>	CO = <u>0,221</u>	NOx = <u>0,100</u>

Check one:	
Regular DF	<input checked="" type="checkbox"/>
Modified DF	<input type="checkbox"/>
If different vehicle specify vehicle ID	

43. Emission Test Results:

Official Test Results		Test 1	Test 2	Test 3	Test 4
g/km	CO				0,160
g/km	CO ₂				122,36
g/km	HC				0,040
g/km	NOx				0,023
g/test	Evap.				1,08

(X)

(X)

(X)

(+)

Deterioration Factors
1,439

1,000
1,000
0,01

44. Certification Levels:

g/km	CO	0,230		
g/km	HC	0,040		
g/km	NOx	0,023	HC+NOx	0,063 = 0,8
g/test	Evap.	1,090		

Evaporative Emission Information

45. Evaporative Family: KBMXU0021K51 53. Engine Displacement Class: III

46. Number of Evap. Canisters: 1 54. Storage Medium Composition: charcoal

47. Design Working Capacity: 21g 55. Evap. Canister Medium Volume: 300 cm³

48. Configuration: plastic can 56. Evap. Family Sales (California):

49. Number of Storage Areas: 1 57. Engine Code: 50s

50. Fuel Reservoir Volume: 30L 58. Evap. Emission Family Code: 50s

51. Vent System Configuration: purge 59. Evap. Emission Family Group: NA

52. Nominal Tank Capacity: 30L 60. Overall Evap D.F. = 0,01

Bench DF61. Test Vehicle ID: V205478

62. Test Results:

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3500	0,046
2	10000	0,042
3	15000	0,042
4		
5		
6		
Interpolated Values at 15000 km: = <u>0,042</u>		
Extrapolated Values at 30000 km: = <u>0,037</u>		
Bench Test D.F. = <u>0</u>		

Check One:	
Regular DF:	<input checked="" type="checkbox"/>
Modified DF:	<input type="checkbox"/>
If different vehicle specify the vehicle ID	

Vehicle DF63. Test Vehicle ID: V205743

64. Test Results:

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3500	1,017
2	10037	0,261
3	10070	0,219
4	15038	1,079
5		
6		
Interpolated Values at 15000 km: = <u>0,622</u>		
Extrapolated Values at 30000 km: = <u>0,560</u>		
Vehicle Test D.F. = <u>0,01</u>		

Evaporative Emission Information

45. Evaporative Family: JBMXC01.2K5X 53. Engine Displacement Class: III

46. Number of Evap. Canisters: 1 54. Storage Medium Composition: charcoal

47. Design Working Capacity: 21 g 55. Evap. Canister Medium Volume: 300 cm³

48. Configuration: plastic can 56. Evap. Family Sales (California):

49. Number of Storage Areas: 1 57. Engine Code: 50s

50. Fuel Reservoir Volume: 20 l 58. Evap. Emission Family Code: 50s

51. Vent System Configuration: purge 59. Evap. Emission Family Group: NA

52. Nominal Tank Capacity: 20 l 60. Overall Evap D.F. =

Bench DF

61. Test Vehicle ID: V204772

62. Test Results:

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3500	0.196
2	10000	0.149
3	15000	0.195
4		
5		
6		
Interpolated Values at 15000 km: = <u>0,177</u>		
Extrapolated Values at 30000 km: = <u>0,171</u>		
Bench Test D.F. = <u>-0,007</u> = 0		

Check One:	
Regular DF:	<input checked="" type="checkbox"/>
Modified DF:	<input type="checkbox"/>
If different vehicle specify the vehicle ID	

Vehicle DF

63. Test Vehicle ID: V204771

64. Test Results:

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3500	0,084
2	10037	0,187
3	10070	0,113
4	15038	0,225
5		
6		
Interpolated Values at 15000 km: = <u>0,217</u>		
Extrapolated Values at 30000 km: = <u>0,397</u>		
Vehicle Test D.F. = <u>0,181</u>		

Motorcycle Model Summary Form

65. Model Designation	66. Worst Case	67. Displ. (cc)	68. Bore / Stroke (mm)	69. Basic Ignition Timing (degrees)
R1250GS		1254	102,5 / 76	#
R1250GS Adv.	x	1254	102,5 / 76	#
R1250RT		1254	102,5 / 76	#
R1250RS		1254	102,5 / 76	#
R1250R		1254	102,5 / 76	#

65. Model Designation	70. Rated Power (kW)	71. Rated Speed (RPM)	72. Rated Torque (Nm)	73. Rated Speed (RPM)
R1250GS	100	7750	143	6250
R1250GS Adv.	100	7750	143	6250
R1250RT	100	7750	143	6250
R1250RS	100	7750	143	6250
R1250R	100	7750	143	6250

65. Model Designation	74. EIM (kg)	75. Loaded Vehicle Weight Range (kg)	76. Road Load (nt)	77. Total Vehicle Mass (kg)
R1250GS	330	326-335	141,6	465
R1250GS Adv.	350	346-355	145,6	485
R1250RT	360	356-365	147,7	505
R1250RS	320	316-325	139,5	460
R1250R	320	316-325	139,5	460

65. Model Designation	78. Full Weight with all Factory Options (kg)	79. Trans.Type	80. N/V
R1250GS	249	M-6	35,36
R1250GS Adv.	268	M-6	35,36
R1250RT	279	M-6	33,72
R1250RS	243	M-6	34,53
R1250R	239	M-6	34,53

81. FUEL SYSTEM:

65. Model Designation	A. Carburetor Assembly	B. Fuel Injector	C. Fuel Pump	D. Fuel Pressure Regulator
R1250GS	NA	8567156	8393577	7614317 (Fuel pressure sensor)
R1250GS Adv.	NA	8567156	8393577	7614317 (Fuel pressure sensor)
R1250RT	NA	8567156	8393577	7614317 (Fuel pressure sensor)
R1250RS	NA	8567156	8393577	7614317 (Fuel pressure sensor)
R1250R	NA	8567156	8393577	7614317 (Fuel pressure sensor)

65. Model Designation	E. (Other)	F. (Other)
R1250GS	NA	NA
R1250GS Adv.	NA	NA
R1250RT	NA	NA
R1250RS	NA	NA
R1250R	NA	NA

Engine Family: **JBMXC01.24K5****82. IGNITION SYSTEM:**

65. Model Designation	A. ECM	B. Ignition Coil (main)	C. Ignition Coil (auxiliary, if fitted)	D. Spark Plug
R1250GS	0 261 S19 678	8567157	NA	NGK LMAR8AI-10
R1250GS Adv.	0 261 S19 678	8567157	NA	NGK LMAR8AI-10
R1250RT	0 261 S19 678	8567157	NA	NGK LMAR8AI-10
R1250RS	0 261 S19 678	8567157	NA	NGK LMAR8AI-10
R1250R	0 261 S19 678	8567157	NA	NGK LMAR8AI-10

65. Model Designation	E. (Other)	F. (Other)	G. (Other)	H. (Other)
R1250GS	NA	NA	NA	NA
R1250GS Adv.	NA	NA	NA	NA
R1250RT	NA	NA	NA	NA
R1250RS	NA	NA	NA	NA
R1250R	NA	NA	NA	NA

83. AIR INJECTION SYSTEM: ____ Yes ☒ No; Type: _____

65. Model Designation	A. Control Valve	B. Check Valve	C. Solenoid Valve	D. (Other)
				NA
				NA
				NA
				NA

65. Model Designation	E. (Other)	F. (Other)
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

84. EVAPORATIVE EMISSION CONTROL SYSTEM: ____ Yes ____ No; Type: Purge

65. Model Designation	A. Evap. Canister	B.. Carburetor Air Vent Control Valve	C. Purge Control Valve
R1250GS	7727387	NA	8567224
R1250GS Adv.	7727387	NA	8567224
R1250RT	7727387	NA	8567224
R1250RS	7727387	NA	8567224
R1250R	7727387	NA	8567224

65. Model Designation	D. Fuel Tank	E. Fuel Fill Cap	F. (Other)
R1250GS	8 529 311	8 531 632	NA
R1250GS Adv.	8 536 185	8 552 148	NA
R1250RT	8 520 631	8 544 088	NA
R1250RS	8 533 760	8 544 088	NA
R1250R	8 533 760	8 544 088	NA

Engine Family: **JBMXC01.24K5**

Revised:

85. EXHAUST AFTER TREATMENT SYSTEM: X Yes No; Type: TWC

65. Model Designation	A. Catalyst	B. (Other)	C. (Other)	D. (Other)
R1250GS	8564069			
R1250GS Adv.	8564069			
R1250RT	8564069			
R1250RS	8564069			
R1250R	8564069			

86. ELECTRONIC SENSORS: X Yes No; Type:

65. Model Designation	A. Coolant Temperature Sensor	B. Throttle Position Sensor	C. Engine Oil Temperature Sensor
R1250GS	7580635	8568757	7 580 635
R1250GS Adv.	7580635	8568757	7 580 635
R1250RT	7580635	8568757	7 580 635
R1250RS	7580635	8568757	7 580 635
R1250R	7580635	8568757	7 580 635

65. Model Designation	D. Oxygen Sensor	E. Air Temperature Sensor	F. Idle Speed Control Valve
R1250GS	front 8393838/ rear 8392402	1 739 510	NA
R1250GS Adv.	front 8393838/ rear 8392402	1 739 510	NA
R1250RT	front 8393838/ rear 8392402	1 739 510	NA
R1250RS	front 8393838/ rear 8392402	1 739 510	NA
R1250R	front 8393838/ rear 8392402	1 739 510	NA

87. CRANKCASE EMISSION CONTROL SYSTEM: X Yes No; Type:

65. Model Designation	A. Air Cleaner	B. Air Cleaner Housing	C. Air Cleaner Housing Cover
R1250GS	7726799	8567190	NA
R1250GS Adv.	7726799	8567190	NA
R1250RT	7726799	8567190	NA
R1250RS	7726799	8567192	NA
R1250R	7726799	8567192	NA

65. Model Designation	C. Crankcase Breather Separator	D. Crankcase Breather Storage Tank	E. (Other)
R1250GS	NA	NA	NA
R1250GS Adv.	NA	NA	NA
R1250RT	NA	NA	NA
R1250RS	NA	NA	NA
R1250R	NA	NA	NA

Engine Family: **KBMXC01.34K5**

Revised:

88. OTHER COMPONENTS: ☐ Yes ☒ No; Type: _____

65. Model Designation	A. EGR	B. (Specify)	C. (Specify)

89. INTAKE AIR TEMPERATURE SYSTEM: ☐ Yes ☒ No; Type: _____

65. Model Designation	A. IAT Check Valve	B. IAT Sensor	C. IAT Thermal Vacuum Valve

65. Model Designation	D. IAT Valve	E. (Other)	F. (Other)

Motorcycle Label and Warranty Information Form

90. Emission Label Format Previously Approved? ☐ Yes ☒ No
If yes, Reference Previous Approval: _____


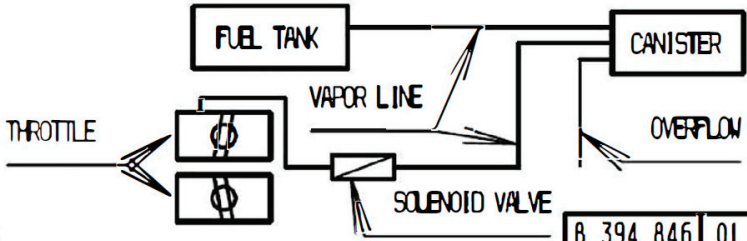
91. Emission Warranty Previously Approved? ☐ Yes ☒ No
If yes, Reference Previous Approval: _____

Have any changes been made since the last approval? ☐ Yes ☒ No

If yes, provide an explanation to point out the changes: _____

92. Emission Control Information Label Location: under the seat

R1250GS/ R1250GS Adv/ R1250RT/ R1250R/ R1250RS

		VEHICLE EMISSION CONTROL INFORMATION		MY2019 50- STATES	
		BAYERISCHE MOTOREN WERKE AG			
MODEL		R1250 GS/ GS ADV/ RT/ R/ RS			
ENGINE FAMILY		KBMXC01.34K5			
EVAPORATIVE EMISSION FAMILY		KBMXU0021K5X / KBMXU0021K51			
DISPLACEMENT		125 4cc			
EXHAUST EMISSION CONTROL SYSTEM		MF1, TWC, 3H02S			
PERMEATION FAMILY		KBMXPP102BK5 / KBMXPMETAL51			
TUNE UP SPECIFICATIONS					
VALVE CLEARANCE (ENGINE COLD)		IN: 0.10-0.17MM EX: 0.34-0.41MM			
GASOLINE MIN 87 AKI		IDLE SPEED 1050±50 RPM			
LUBRICATION		SEE OWNER'S MANUAL			
NO OTHER ADJUSTMENTS NEEDED					
THIS VEHICLE CONFORMS TO U.S. EPA AND CALIFORNIA REGULATIONS APPLICABLE TO 2018 MODEL YEAR NEW MOTORCYCLES AND IS CERTIFIED TO AN HC+NO _x EMISSION STANDARD OF 0.8 G/KM.					
VACUUM HOSE ROUTING DIAGRAM					
					
8 394 846 01					

93. Vacuum Hose Routing Diagram Label Location:

see above

CONFIDENTIAL Information Form

[illegible]

2019 / BMW Motorcycle

Section: 4: Page: 13

Engine Family: **KBMXC01.34K5**

Issued: 06/28/17

Revised:

95. Additional Comments: ☐ Yes ☒ No

Manufacturing Information

Vehicle Production Locations

BMW AG Motorcycle Plant Berlin
Am Juliusturm 14 – 38
13599 Berlin
Germany

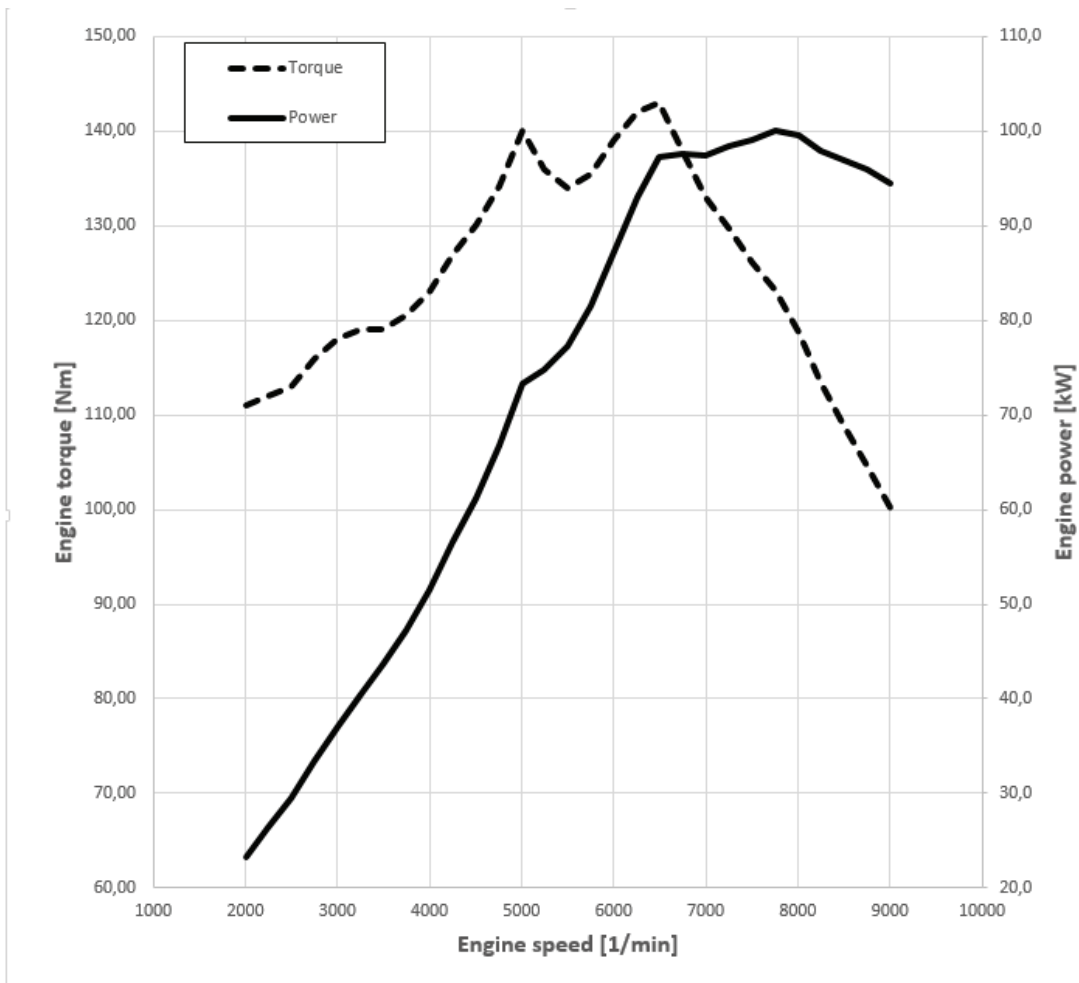
Engine Production Locations

BMW AG Motorcycle Plant Berlin
Am Juliusturm 14 – 38
13599 Berlin
Germany

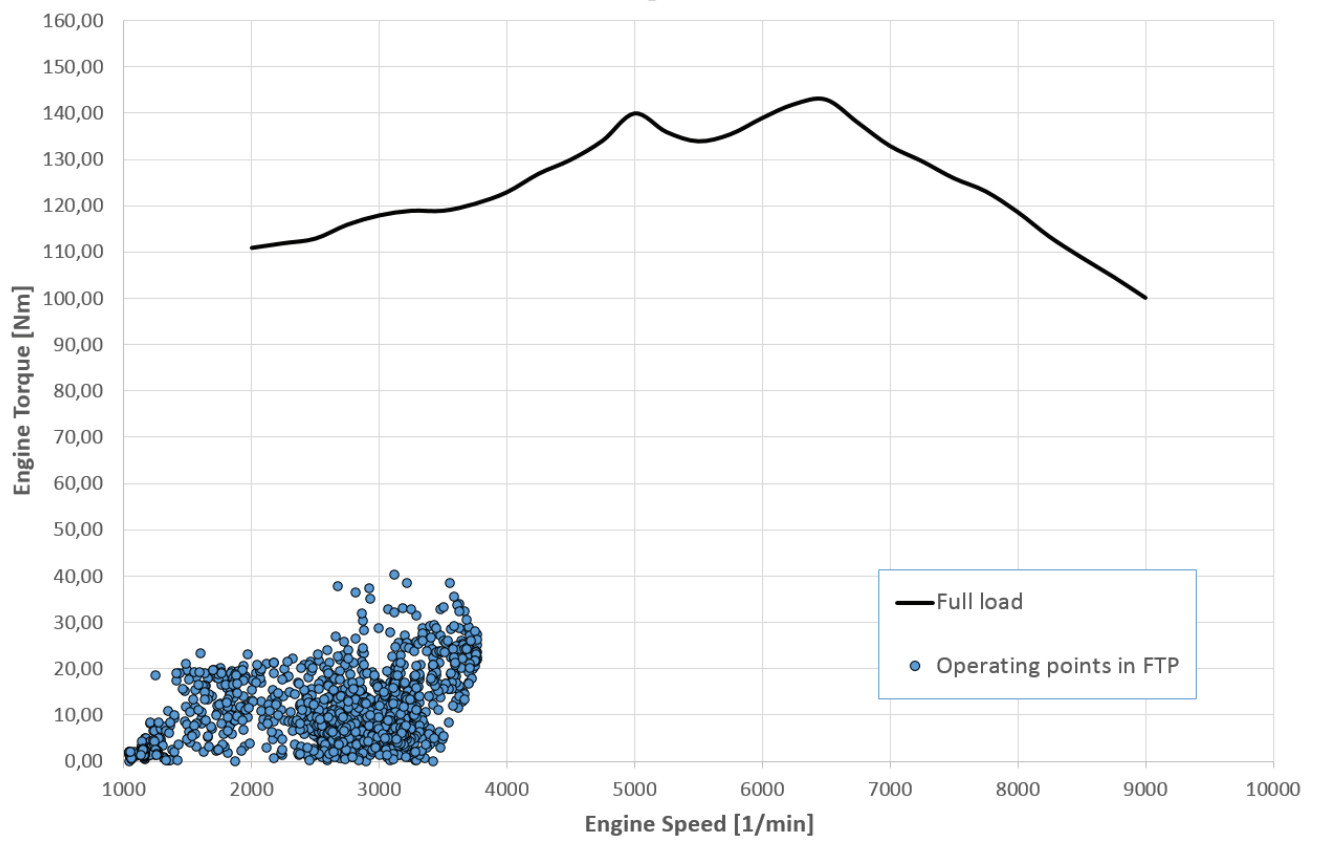
Drive Modes

Mode \	Road	Rain	Dynamic	Enduro	Enduro Pro	Dynamic Pro
Throttle response	Normal	Slower	Faster	Normal	Normal is standard (Normal/Slower/Faster are freely configurable)	Faster is standard (Normal/Slower/Faster are freely configurable)
Max. Torque	Normal	Normal	Normal	Normal	Normal	Normal
Max. Performance	Normal	Normal	Normal	Normal	Normal	Normal
Overrun Acoustics	Off	Off	Off	Off	Off	Off
Overrun Fuel Cut-Off	On	On	On	On	On	On
Changes to Chassis Control Systems		x	x	x	x	x
Worst Case			x (tested; only due to sensitivity of throttle)			

Engine Output Curves



Power and Torque curve of K5x models.



Worst Case Determination

Emission Family

Model	R1250GS	R1250GS Adventure	R1250RT	R1250R	R1250RS
Equivalent Inertia Weight in kg	330kg	350kg	360kg	320kg	320kg
N/V ratio					
Worst Case	No	Yes	No	No	No

Because the R1250GS Adventure model is the first model within the engine family which will be produced. Thus, the R1250GS Adventure is selected as worst-case. To account for the future addition of other models, we have added 40 kg to the EIM and performed the service accumulation and emissions testing at an EIM of 390 kg.

Permeation Family

Model	R1200GS	R1250RT	R1250R	R1250RS	R1250GS
Type of Material	PA	PA	PA	PA	PA
Emission Control Strategy	Inherently Low/ Zero Permeation Material	Inherently Low/ Zero Permeation Material	Inherently Low/ Zero Permeation Material	Inherently Low/ Zero Permeation Material	Inherently Low/ Zero Permeation Material
Production Method	Blow molded	Blow molded	Blow molded	Blow molded	Blow molded
Least weight percentage of barrier material	1mm	1mm	1mm	1mm	1mm
Worst Case	Yes	No	No	No	No

We used the fuel tank of R1200GS as worst case because it was the first model of this family. All four models are deemed equivalent with respect to permeation emissions.

We don't need on this family for K51 a worst case selection because of the metal tank.

Durability Test Information – Engine Family: KBMXC01.24K5

Test Facility Locations

Durability/ Emission:
TÜV Technische Überwachung Hessen GmbH
Technologie- und Umweltzentrum
Werner-von-Siemens-Straße 35
64319 Pfungstadt

Fuel Specification: data sheet can be found behind the log book

Area for Accumulation: Chassis Dynamometer (Indoor)

Who is driving: Durability is done by Robot Driver, Emission Test is done by Human

Log-Book: Can be found on the next page

Manufacturer Request for Indoor accumulation is included in the application and can be found on page 7.

V-No.	Y-No.	T-No.	Veh.Type	Engine	Trans	Vehicle Contact	Reg.-No.
210056		U524117	R 1250 G US	A74B12M1		Schmitz/Riegert	M-FR 702
Total Test Mileage		15030 km	Odo Reading		15030 km	Date of	01.02.18

Purpose	Comments/Route	SIA	Driver	From/Odometer	To/Odometer
L	Werkstattaufenthalt/DL-Ende		UX-EA-8	01.02.18 - 09:56 14856 km	09.02.18 - 09:54
R	RE21 5000 km		EG-791	19.01.18 - 10:24 10030 km	01.02.18 - 09:54 15030 km
L	Abgastest 0 km		UX-EA-8	21.12.17 - 09:46 10030 km	19.01.18 - 10:19 10030 km
R	RE21 6500 km		EG-791	07.12.17 - 09:44 3530 km	21.12.17 - 09:44 10030 km
L	Abgastest 0 km		UX-EA-8	27.11.17 - 07:38 3530 km	07.12.17 - 07:42 3530 km
R	RE83 3500 km		EG-791	17.11.17 - 08:07 30 km	27.11.17 - 07:35 3530 km
R	Rollenfahrt 0 km		UX-EA-8	09.11.17 - 08:30 30 km	17.11.17 - 07:57 30 km

V-Nr.	Tankdatum	Kilometerstand	Menge-Kraftstoff	Kraftstoffeinheit	Strecke	Verbrauch
210056	17.11.2017 08:20	90,00	16,34	L	0,00	0,00
210056	17.11.2017 16:26	240,00	12,19	L	150,00	8,13
210056	17.11.2017 22:28	507,00	13,71	L	267,00	5,13
210056	17.11.2017 23:43	549,00	1,92	L	42,00	4,57
210056	20.11.2017 15:10	844,00	15,08	L	295,00	5,11
210056	21.11.2017 11:26	1031,00	9,31	L	187,00	4,98
210056	22.11.2017 08:41	1062,00	8,07	L	31,00	26,03
210056	22.11.2017 19:14	1399,00	16,36	L	337,00	4,85
210056	23.11.2017 04:53	1437,00	2,48	L	38,00	6,53
210056	23.11.2017 13:28	1779,00	16,24	L	342,00	4,75
210056	24.11.2017 01:23	1966,00	9,41	L	187,00	5,03
210056	24.11.2017 07:55	2258,00	14,18	L	292,00	4,86
210056	24.11.2017 21:19	2526,00	13,04	L	268,00	4,87
210056	25.11.2017 04:41	2868,00	16,86	L	342,00	4,93
210056	25.11.2017 13:09	3098,00	10,79	L	230,00	4,69
210056	27.11.2017 05:53	3440,00	17,36	L	342,00	5,08
210056	07.12.2017 14:45	3531,00	16,78	L	91,00	18,44
210056	07.12.2017 19:30	3736,00	10,47	L	205,00	5,11
210056	08.12.2017 04:22	4109,00	18,32	L	373,00	4,91
210056	08.12.2017 11:11	4126,00	0,27	L	17,00	1,59
210056	08.12.2017 21:22	4578,00	22,76	L	452,00	5,04
210056	11.12.2017 08:53	5053,00	23,64	L	475,00	4,98
210056	11.12.2017 18:59	5153,00	4,60	L	100,00	4,60
210056	12.12.2017 05:42	5629,00	23,62	L	476,00	4,96
210056	12.12.2017 23:28	6110,00	23,86	L	481,00	4,96
210056	13.12.2017 12:03	6325,00	10,38	L	215,00	4,83
210056	13.12.2017 22:40	6798,00	23,52	L	473,00	4,97
210056	14.12.2017 16:09	7238,00	21,30	L	440,00	4,84
210056	15.12.2017 12:32	7720,00	23,89	L	482,00	4,96
210056	17.12.2017 23:29	7752,00	1,19	L	32,00	3,72
210056	18.12.2017 16:41	8245,00	25,18	L	493,00	5,11
210056	18.12.2017 20:51	8403,00	7,39	L	158,00	4,68
210056	19.12.2017 13:41	8729,00	16,08	L	326,00	4,93
210056	19.12.2017 20:28	8982,00	12,53	L	253,00	4,95
210056	20.12.2017 13:14	9464,00	23,82	L	482,00	4,94
210056	20.12.2017 18:08	9547,00	4,34	L	83,00	5,23
210056	22.01.2018 11:27	10030,00	18,10	L	483,00	3,75
210056	23.01.2018 00:40	10496,00	21,89	L	466,00	4,70
210056	24.01.2018 05:21	11031,00	26,62	L	535,00	4,98
210056	24.01.2018 14:23	11451,00	20,40	L	420,00	4,86
210056	25.01.2018 06:22	11789,00	15,69	L	338,00	4,64
210056	25.01.2018 20:26	12070,00	13,76	L	281,00	4,90
210056	26.01.2018 06:50	12544,00	22,98	L	474,00	4,85
210056	26.01.2018 16:30	12623,00	3,92	L	79,00	4,96
210056	26.01.2018 21:27	12845,00	10,72	L	222,00	4,83
210056	29.01.2018 09:45	13320,00	22,53	L	475,00	4,74
210056	30.01.2018 04:12	13798,00	23,23	L	478,00	4,86
210056	30.01.2018 08:07	13955,00	7,88	L	157,00	5,02
210056	30.01.2018 19:47	14106,00	7,34	L	151,00	4,86
210056	31.01.2018 11:27	14429,00	15,89	L	323,00	4,92
210056	31.01.2018 21:26	14856,00	20,03	L	427,00	4,69

CERTIFICAT D'ANALYSE

PRODUIT: BMW_OK_HO-T2E0

DATE DE FABRICATION: 19/05/2017

LOT: PCE050264P

Fût : DM200L -

ANALYSES	RÉSULTATS	MÉTHODES
Période d'induction	En cours d'analyse	ASTM D 525
Teneur en gommes actuelles lavées	En cours d'analyse	ASTM D 381
Teneur en gommes actuelles non-lavées	En cours d'analyse	
Teneur en eau	En cours d'analyse	NF EN ISO 12937
Teneur en Manganèse	En cours d'analyse	NF T 60-106
Teneur en Phosphore	En cours d'analyse	
Teneur en Plomb	En cours d'analyse	ASTM D 5059
Corrosion cuivre 3h, 50°C	En cours d'analyse	ASTM D 130
Aspect visuel	Clair et limpide	VISUELLE
Masse volumique à 15°C	735.6 kg/m³	NF EN ISO 12185
Pression de vapeur PVSE	63.0 kPa	ASTM D 5191
AVP 100	330.1 kPa	
PI	30.2 °C	ASTM D 86
5 % Vol	45.7 °C	
10 % Vol	62.3 °C	
20 % Vol	62.7 °C	
30 % Vol	73.7 °C	
40 % Vol	87.0 °C	
50 % Vol	100.5 °C	
60 % Vol	110.7 °C	
70 % Vol	119.6 °C	
80 % Vol	132.5 °C	
90 % Vol	168.7 °C	
95 % Vol	174.2 °C	
PF	187.6 °C	
Résidu	0.6 % (v/v)	
Pertes	1.4 % (v/v)	
E 70 °C	28.2 % (v/v)	
E 100 °C	51.0 % (v/v)	
E 150 °C	88.3 % (v/v)	
RON	96.0 index	NF EN ISO 5164
MON	86.4 index	NF EN ISO 5163
Anti Knock Index	91.2 index	CALCUL
Sensibilité	9.6 index	CALCUL
Teneur en soufre	30.0 mg/kg	NF EN ISO 20846

PRODUIT: BMW_OK_HO-T2E0

DATE DE FABRICATION: 19/05/2017

LOT: PCE050264P

Fût : DM200L -

ANALYSES	RÉSULTATS	MÉTHODES
Teneur en Aromatiques	26.4 % (v/v)	NF EN ISO 22854
Teneur en Oléfines	8.7 % (v/v)	
Teneur en Benzène	0.57 % (v/v)	
Teneur en Aromatiques C9	6.98 % (v/v)	
Teneur en Aromatiques C10	3.69 % (v/v)	
Teneur en Aromatiques C11+	1.06 % (v/v)	
Teneur en Methanol	<0.17 % (v/v)	
Teneur en Ethanol	<0.17 % (v/v)	
Teneur en MTBE	<0.17 % (v/v)	
Teneur en ETBE	<0.17 % (v/v)	
Teneur en Oxygène total	<0.20 % (m/m)	
Pouvoir Calorifique Inférieur Calculé	43.36 MJ/kg	GC-Calculated
Teneur en C	86.2 % (m/m)	
Teneur en H	13.8 % (m/m)	
Teneur en O	<0.2 % (m/m)	
air / carburant stoecom.	14.65 gair/gfuel	

: hors spécifications; (...): en cours d'analyse; en italique : analyse sous-traitée

OBSERVATIONS:

March, 2017_Version 003

DATE

SIGNATURE

Givors, le

Anti-Tampering Measures at ECU

ECU Manufacturer: BOSCH

Protection against Tampering in the Engine Control Unit:

The Software inside the ECU is signed by using a BMW Central Server.

The Bootloader inside the ECU checks the signature of the Software before starting it. With this mechanism it is assured that only software signed by BMW will run on the ECU.

A Software which is not signed, or signed with the wrong key will result in a permanent loop of Reboots.

BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

14.06.2012
30.11.2017

01FF-K50G-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 1 von 2
Sheet 1 of 2

R 1250 GS



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

14.06.2012
30.11.2017

01FF-K50G-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 2 von 2
Sheet 2 of 2

Fahrzeug mit Sonderzubehör / Vehicle with optional accessories



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

21.06.2013
30.11.2017

01FF-K51G-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 1 von 2
Sheet 1 of 2

R 1250 GS Adventure



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

21.06.2013
30.11.2017

01FF-K51G-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 2 von 2
Sheet 2 of 2

Fahrzeug mit Sonderzubehör / Vehicle with optional accessories



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

03.06.2013
28.03.2018

01FF-K52T-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 1 von 2
Sheet 1 of 2

R 1250 RT



Fahrzeug mit Sonderzubehör / Vehicle with optional accessories



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified

09.05.2014
26.03.2018

01FF-K53R-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 1 von 2
Sheet 1 of 2

R 1250 R



Fahrzeug mit Sonderzubehör / Vehicle with optional accessories



BMW Group

Anlage
Attachment

Benennung
Designation

Datum/Date
geändert/modified 20.10.2014
28.03.2018

01FF-K54S-01

Foto des Fahrzeugs
Photograph of the vehicle

Seite 1 von 2
Sheet 1 of 2

R 1250 RS

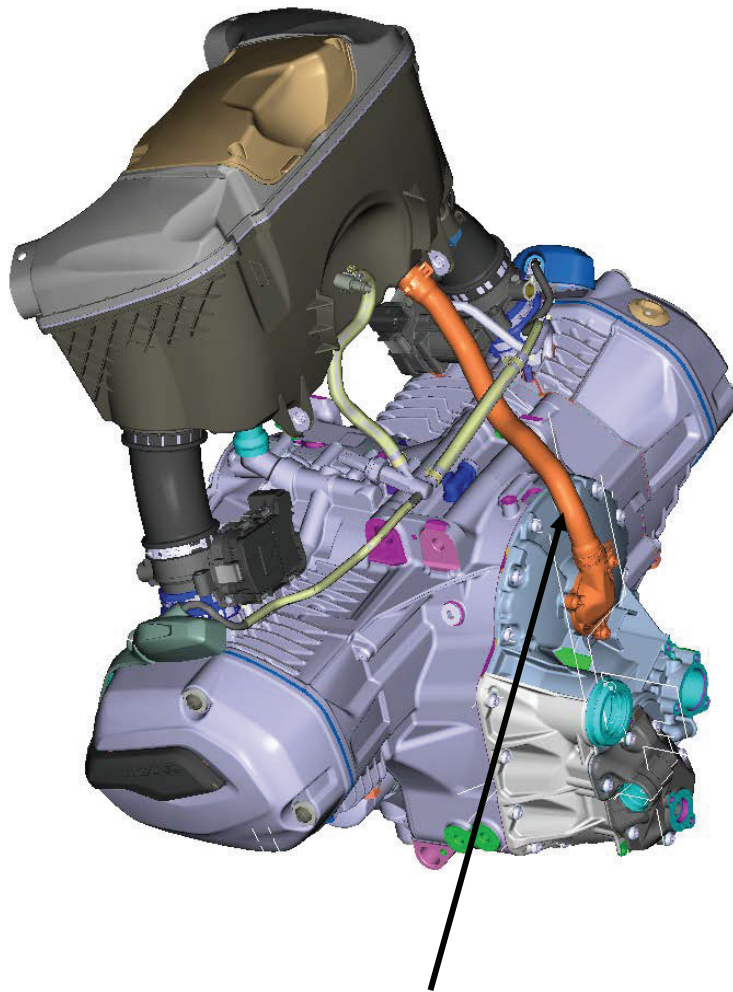


Fahrzeug mit Sonderzubehör / Vehicle with optional accessories



Ignition-timing

Engine speed [RPM]	2498	2748	2998	3248	3498	3748	3998	4249	4498	4748	4999	5249	5499	5749
Ingition angle (ac tual values) [° before TDC]	18,1	20,7	22,8	26,1	28,2	31,2	32,3	31,5	31,5	32,3	29,9	32,2	32,3	30,8
Engine speed [RPM]	5999	6250	6499	6750	7000	7250	7500	7750	8001	8251	8501	8753	9002	
Ingition angle (ac tual values) [° before TDC]	29,9	29,8	32	33,8	35,3	34,5	33	33,2	36,7	38,2	39,7	40,5	42	



Motorentlüftung über den
Entlüftungsschlauch in den
Luftsammler

Engineventilation effects from vent
hose in the airbox

DECIPHERMENT OF BMW MOTORCYCLE VIN's ACCORDING TO FMVSS 115 AND PART 565

Table for R 1250 GS Adventure, MY 2019

<u>VIN</u>	<u>WB1</u>	<u>0J530</u>	<u>-</u>	<u>K</u>	<u>Z</u>	<u>000000</u>
<u>World Manufacturer Identifier</u>						
WB1 = BMW AG Motorcycles, Munich / Germany						
<u>Vehicle Description Section</u>						
ECE = 0J510						
Type of motorcycle:	Two-wheel					
Line:	K51					
Engine type:	2-cylinder gasoline engine, 77 cu.in., 4-stroke 100 kW (134 BHP)					
<u>Check Digit</u>						
To be assigned by manufacturer						
<u>Model Year</u>						
K = 2019						
<u>Plant of Manufacture</u>						
Z, 6 = Berlin						
<u>Sequential Production Number</u>						
To be assigned by manufacturer						

DECIPHERMENT OF BMW MOTORCYCLE VIN's ACCORDING TO FMVSS 115 AND PART 565

Table for R 1250 GS, MY 2019

<u>VIN</u>	<u>WB1</u>	<u>0J930</u>	<u>-</u>	<u>K</u>	<u>Z</u>	<u>000000</u>
<u>World Manufacturer Identifier</u>						
WB1 = BMW AG Motorcycles, Munich / Germany						
<u>Vehicle Description Section</u>						
ECE = 0J910						
Type of motorcycle:	Two-wheel					
Line:	K50					
Engine type:	2-cylinder gasoline engine, 77 cu.in., 4-stroke 100 kW (134 BHP)					
<u>Check Digit</u>						
To be assigned by manufacturer						
<u>Model Year</u>						
K = 2019						
<u>Plant of Manufacture</u>						
Z, 6 = Berlin						
<u>Sequential Production Number</u>						
To be assigned by manufacturer						

DECIPHERMENT OF BMW MOTORCYCLE VIN's ACCORDING TO FMVSS 115 AND PART 565

Table for R 1250 R, MY 2019

<u>VIN</u>	<u>WB1</u>	<u>0J730</u>	<u>-</u>	<u>K</u>	<u>Z</u>	<u>000000</u>
<u>World Manufacturer Identifier</u>						
WB1 = BMW AG Motorcycles, Munich / Germany						
<u>Vehicle Description Section</u>						
ECE = 0J710						
Type of motorcycle: Two-wheel						
Line: K53						
Engine type: 2-cylinder gasoline engine, 77 cu.in., 4-stroke 100 kW (134 BHP)						
<u>Check Digit</u>						
To be assigned by manufacturer						
<u>Model Year</u>						
K = 2019						
<u>Plant of Manufacture</u>						
Z, 6 = Berlin						
<u>Sequential Production Number</u>						
To be assigned by manufacturer						

DECIPHERMENT OF BMW MOTORCYCLE VIN's ACCORDING TO FMVSS 115 AND PART 565

Table for R 1250 RS, MY 2019

<u>VIN</u>	<u>WB1</u>	<u>0J830</u>	<u>-</u>	<u>K</u>	<u>Z</u>	<u>000000</u>
<u>World Manufacturer Identifier</u>						
WB1 = BMW AG Motorcycles, Munich / Germany						
<u>Vehicle Description Section</u>						
ECE = 0J810						
Type of motorcycle: Two-wheel						
Line: K54						
Engine type: 2-cylinder gasoline engine, 77 cu.in., 4-stroke 100 kW (134 BHP)						
<u>Check Digit</u>						
To be assigned by manufacturer						
<u>Model Year</u>						
K = 2019						
<u>Plant of Manufacture</u>						
Z, 6 = Berlin						
<u>Sequential Production Number</u>						
To be assigned by manufacturer						

DECIPHERMENT OF BMW MOTORCYCLE VIN's ACCORDING TO FMVSS 115 AND PART 565

Table for R 1250 RT, MY 2019

<u>VIN</u>	<u>WB1</u>	<u>0J630</u>	<u>-</u>	<u>K</u>	<u>Z</u>	<u>000000</u>
<u>World Manufacturer Identifier</u>						
WB1 = BMW AG Motorcycles, Munich / Germany						
<u>Vehicle Description Section</u>						
ECE = 0J610						
Type of motorcycle:	Two-wheel					
Line:	K52					
Engine type:	2-cylinder gasoline engine, 77 cu.in., 4-stroke 100 kW (134 BHP)					
<u>Check Digit</u>						
To be assigned by manufacturer						
<u>Model Year</u>						
K = 2019						
<u>Plant of Manufacture</u>						
Z, 6 = Berlin						
<u>Sequential Production Number</u>						
To be assigned by manufacturer						



**5404 Bandera Road
San Antonio, Texas 78238-1993
(210) 684-2310**

**FEDERAL REGISTER 40 CFR 1051.515
FULL PERMEATION TEST PROCEDURE
TANK - PA6 MA24 BLACK**

FOR

ACERBIS ITALIA

Report No.: 1843125B-7

SUBMITTED BY:

**VEHICLE FUELS, LUBRICANTS and EMISSIONS TESTING
LABORATORY**

Report History:

**Revision A
Revision B**

**Initial Release
Corrected Cylinder Dimensions**

**16 January, 2006
4 February, 2008**

A handwritten signature in black ink, appearing to read "R. Gay", written over a horizontal line.

Randall A. Gay
Senior Project Engineer
Vehicle Fuels/Lubricants &
Emissions Testing Services

**FEDERAL REGISTER 40 CFR 1051.515
FULL PERMEATION TEST PROCEDURE
TANK - PA6 MA24 BLACK**

FOR

ACERBIS ITALIA

FINAL REPORT

PROPOSAL NO.: 1843125B

COMPONENT: One (1) Prototype fuel tank PA6 MA24 BLACK

DATE EVAL FROM: 21JAN05 **TO:** 29DEC05

TEST TYPE: 40 CFR 1051 SubPart F Sec 515 Full Permeation Test Procedure

OBJECTIVE:

To evaluate the permeation characteristics of prototype plastic fuel tanks following the full permeation test procedure prescribed in 40 CFR 1051 sec 515, including 20-week fuel soak, 4-week permeation test, durability events (Pressure/Vacuum cycles, UV Exposure, Slosh cycles), 20-week soak and 4-week permeation test.

TEST PART DESCRIPTION:

The test tank is a cylinder approximately 317 mm in height and 195 mm in diameter with an average thickness of 0.4476 cm. The test tank is constructed of PA6 MA24 BLACK. The tank has been obtained using the Rotational Molding Process. The material of the tank, polyamide 6, is obtained by anionic polymerization of a liquid reactive system. The material has good properties in terms of chemical resistance, impact strength and thermal resistance.

PROCEDURES:

40 CFR 1051 SubPart F sec. 515.

Precondition:

- a. Fill the fuel tank to 100% rated nominal capacity with Fuel CE10 and allow it to soak at 28 ± 5 °C for twenty- (20) weeks.
- b. At the completion of the twenty- (20) week soak period, pull, drain and refill to 100% rated capacity with fresh CE10 test fuel.
- c. After the tank and its contents have equilibrated to 28 ± 2 °C, seal the fuel tank with non-permeable fittings.

Permeation Test:

- a. Obtain the start of test weight for each sample to the nearest 0.1 gram.
- b. Place each sample in an enclosure held at 28 ± 2 °C and record the enclosure temperature daily.
- c. Soak the tanks for four (4) weeks at 28 ± 2 °C.
- d. At the completion of the soak period, obtain the end of test weight for each sample to the nearest 0.1 gram.
- e. Determine the permeation rate of each tank in g/m²/day. The m² is the external surface area of the tank.

Pressure / Vacuum Test:

- a. Drain Tank.
- b. Subject the empty tank to 10,000 pressure/vacuum cycles from -0.5 psig to 2 psig at a rate of 60 seconds per cycle.

Ultraviolet (UV) Radiation Exposure:

- a. Expose the tank filled with CE10 fuel to ultraviolet light of at least 0.40W-hr/meter² /min for 15 hours per day for 5 weeks.
- b. As an alternative method, the tanks can be exposed to direct sunlight for a cumulative total of 450 hours.
- c. This section can be performed during the preconditioning portion of the procedure.

Slosh Test:

- a. Fill tank to 40% capacity with CE10 fuel.
- b. Slosh the tank by rocking it from +15° to -15° from level at a rate of 15 cycles per minute for 1 million cycles. Perform this test at 28 ± 5 °C.

Precondition:

- a. Fill tank to nominal capacity and seal tank.
- b. Soak the tank at 28 ± 5 °C for the remainder of the time necessary to complete 20 weeks of soak after including the Ultraviolet Exposure and Slosh Testing times.

Permeation Test:

- a. Repeat the 28-day permeation test as shown above.

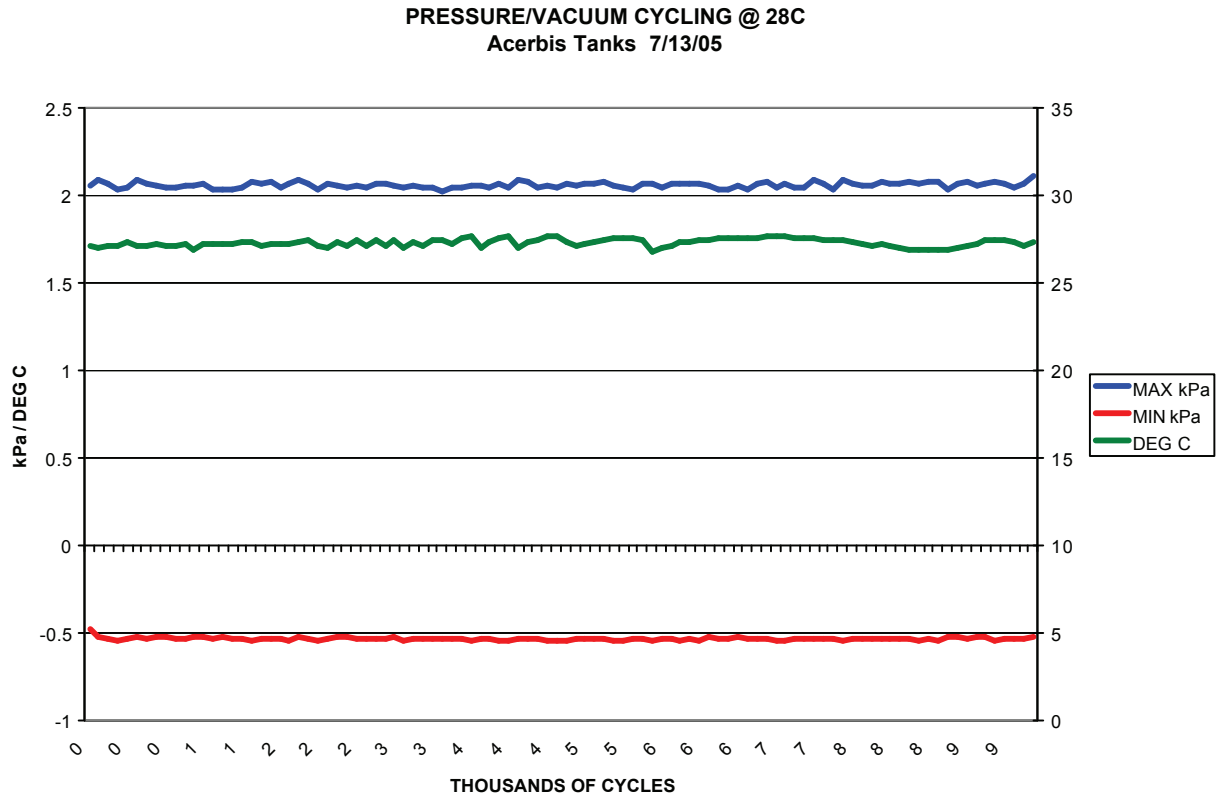
TEST RESULTS:

The cylinder underwent a 20-week preconditioning soak at 28 ± 5 °C starting 1/21/05 and ending 6/10/05. The permeation test was conducted for 28 days from 6/13/05 until 7/11/05.

Initial Permeation Test after 20-week Soak

	Tank		Weight		
	Date	Time		Wt. Loss	Perm g/m ² /day
Start	6/13/2005	7:30 AM	7807.4		
End	7/11/2005	7:30 AM	7806.9	0.5	0.069

After the Permeation Test, the cylinder underwent the prescribed durability events including 10,000 Pressure/Vacuum cycles from -0.5 to 2.0 psig. The data from the P/V cycling is charted in the following graph.



After the P/V cycling, cylinder underwent UV Exposure testing by the direct sunlight method. The cylinder was exposed to 450 hours of direct sunlight from 7/15/05 until 8/13/05.

After The UV Exposure testing, the cylinder underwent 1,000,000 Slosh cycles from +15° to -15° at $28 \pm 5^\circ \text{C}$ from 8/13/05 until 10/12/05.

The cylinder completed the remaining time of the last 20-week soak (20 weeks minus the UV Exposure and Slosh time) by sitting in $28 \pm 5^\circ \text{C}$ until 12/01/05.

The 2nd permeation test was conducted from 12/02/05 until 12/29/05.

Final Permeation Test after Durability Events & 20-week Soak

	Tank		Weight		
	Date	Time		Wt. Loss	Perm g/m ² /day
Start	12/02//2005	1:00 PM	7386.0		
End	12/29/2005	1:00 PM	7381.9	4.1	0.570

COMMENTS:

None.

PHOTOS:



EQUIPMENT:

Thermotron Environmental Chamber
Sartorius Scale Model No. CP34001S
Slosh Rig
P/V Rig

BMW Motorcycle - Diurnal Heat Build - Fuel Tank Heating Equipment

version: November 18, 2011

Principle of Operation

To achieve the required diurnal heat build temperatures during a motorcycle FTP/evap procedure, BMW uses separate systems to heat the liquid fuel and to heat the vapor.

The liquid fuel is heated by means of a circulating water system. The circulating water system includes the following major components:

1. a water-to-fuel heat exchanger that is installed inside the bottom of the fuel tank; the heat exchanger is assembled to an adapter ring; the adapter ring is installed between the fuel tank and fuel filler neck; the adapter ring also houses two thermocouples and serves as the connection point for the circulating water
2. a circulating heated bath and a flow control valve
3. two hoses to connect the circulating heated bath system to the adapter ring/heat exchanger
4. a step-up transformer (the control valve is European spec.; e.g. 230V)

The fuel vapor is heated by means of electric heating strips attached to the exterior of the fuel tank. These heating strips are 230V. A step-up transformer will be supplied so that these heating strips can be controlled by CARB's existing 120V Athena or similar temperature control equipment.

Equipment

1. Adapter Ring / Heat Exchanger

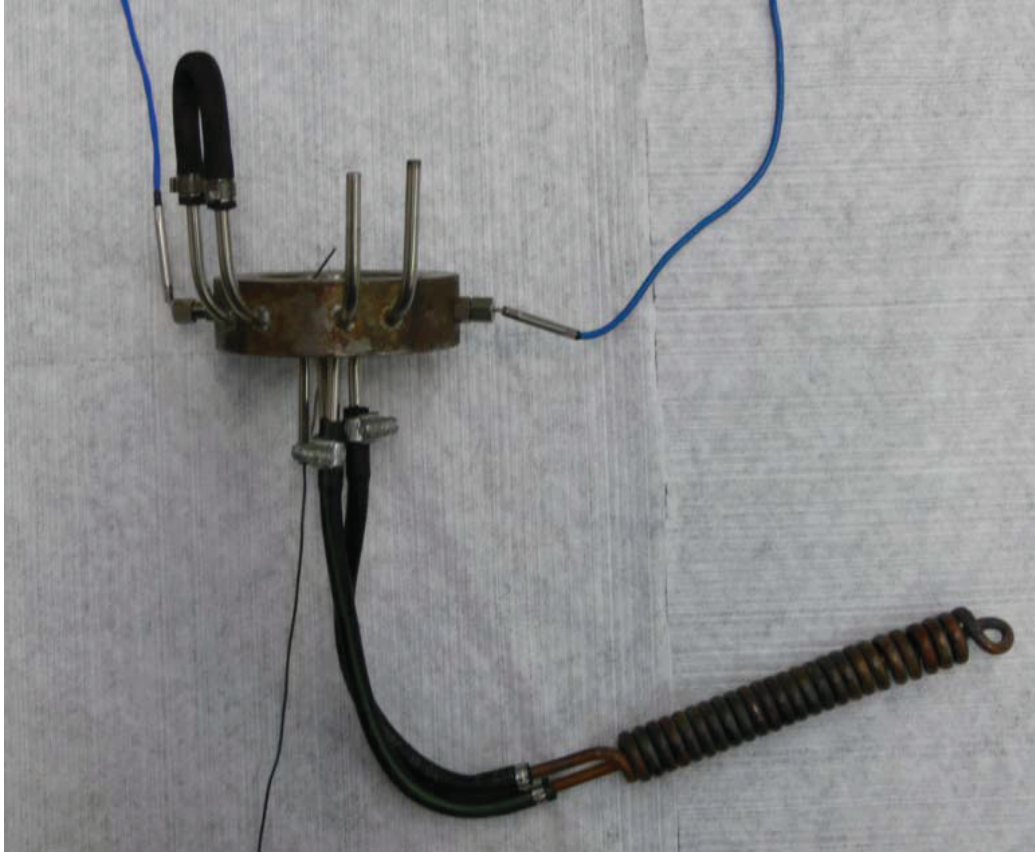


Figure 1. Adapter Ring with Heat Exchanger

The adapter ring is shown in the upper portion of Figure 1. The ring mounts between the fuel tank and filler neck. The adapter ring has two pairs of tubes for connecting the water supply and return hoses to the heat exchanger coil. The short length of hose in the upper left portion of the photo is used to seal the unused set of tubes. The adapter ring also has bosses for the thermocouples. The water-to-fuel heat exchanger is shown in the lower portion of this photograph. It is a coil of metallic tubing and is connected to the adapter ring with a pair of hoses.

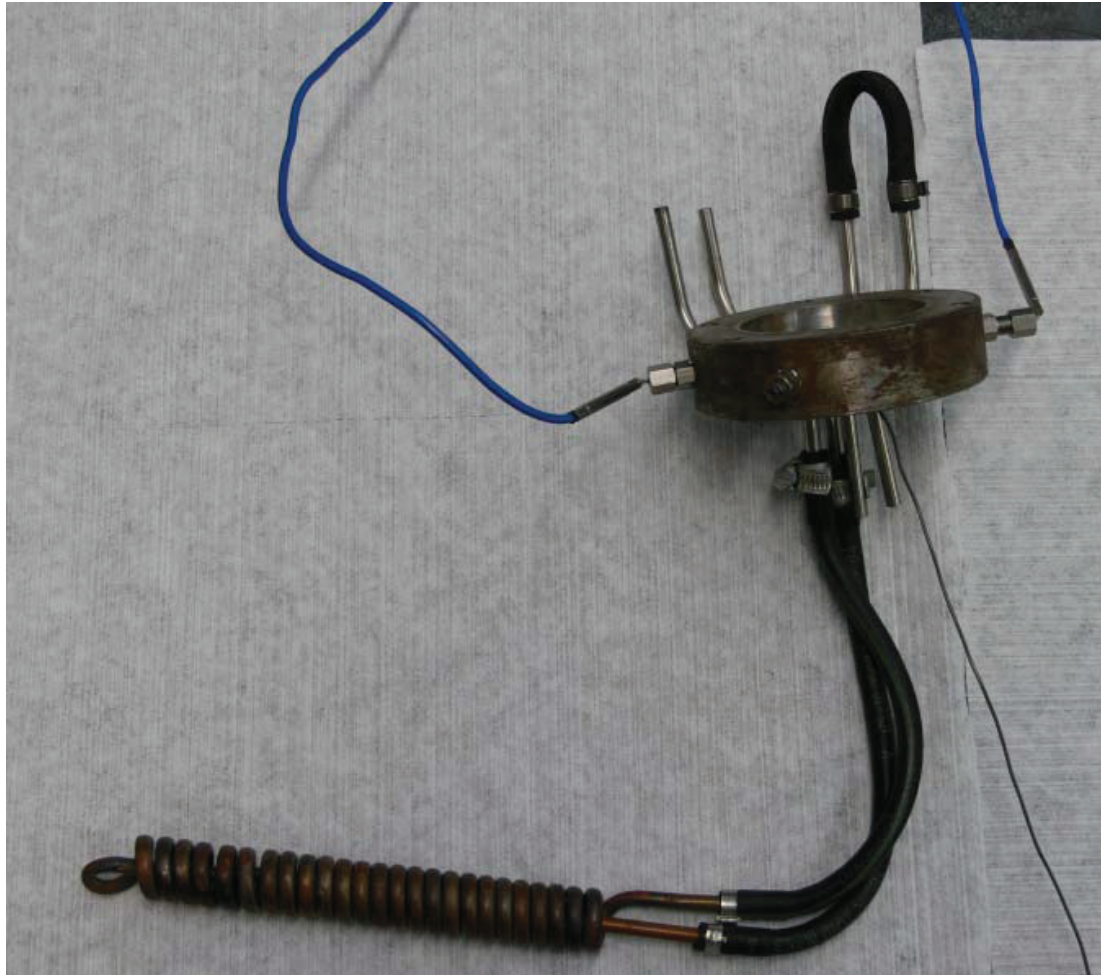


Figure 2. Adapter Ring with Heat Exchanger, alternate view

2. Circulating Heated Bath

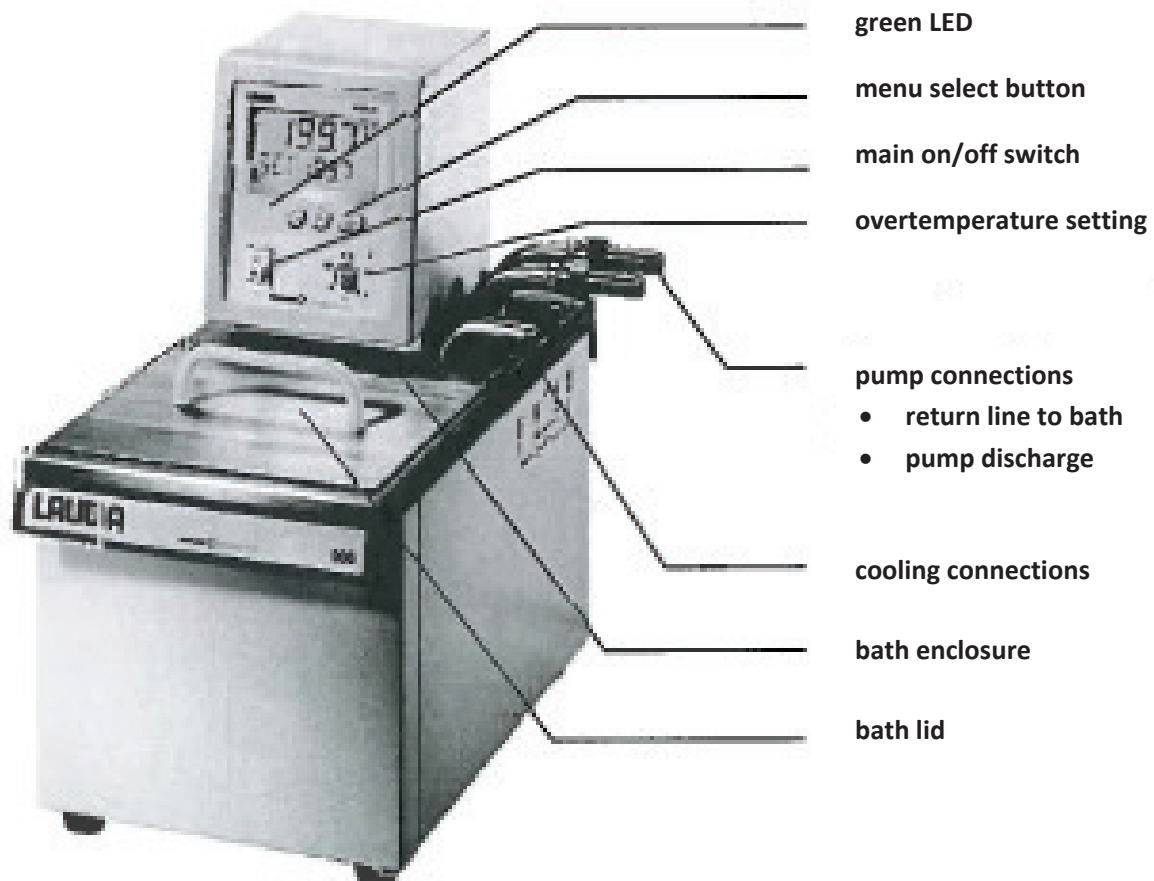


Figure 3. Heated Circulating Bath

The heated circulating bath is a commercially-available piece of lab equipment. It contains a water reservoir, heating element, heating element controller, circulation pump and water inlet and outlet fittings.

Equipment installed on motorcycle

1. System installed and ready for test



Figure 4. Front view of right side of motorcycle

Figure 4 shows the adapter ring/heat exchanger installed in the fuel tank filler area. The two water hoses and two blue thermocouple leads are dressed to the rear of the bike.

One of the electric heating strips is visible just below and to the left of the fuel filler cap. Thin foam blocks, a long spring and zip-ties are used to keep the strip in contact with the tank.



Figure 5. Rear view of right side of motorcycle

Figure 5 shows additional detail of one of the electric heating strips used to achieve fuel vapor temperature.



Figure 6. View of left side of motorcycle

Figure 6 shows the installation of the second electric heating strip used to achieve fuel vapor temperature.

Pre-test instructions:

A. heated water circulation system

- 1. Connect the water hoses*
- 2. fill the water bath*
- 3. connect the power plug*
- 4. connect the valve to transformer (230Vout)*
- 5. connect the transformer to 120V from the test cell temperature controller*
- 6. pretest, switch on the 120V power supply, the pump is running now and when the valve is in function so the system is ready now.*
- 7. switch off the 120V power supply for pretest*

B. heater strip

- 1. Connect the strip to distribution box*
- 2. Connect the distribution box to Transformer output 230V*
- 3. Connect the Transformer to 120V from the test cell temperature controller*
- 4. Connect the Thermocouples to the test cell temperature controller*
- 5. Start pretest for a short time (control temperature on strip and the value in your test cell temperature controller)*
- 6. End pretest*

C. SHED-Test

- 1. Fill chilled fuel in vehicle tank*
- 2. Start SHED-test procedure*